R E P O R T R E S U M E S

ED 018 502 UD 004 989

THE EFFECTS OF THE BOSTON EDUCATIONAL ENRICHMENT PROGRAM ON CHILDREN'S ATTITUDES, VALUES, AND CREATIVITY.

BY- VREELAND, REBECCA S.
HARVARD UNIV., CAMBRIDGE, MASS.

REPORT NUMBER HR/DCED-2 PUB DATE 67
CONTRACT OEC-5-10-239
EDRS PRICE MF-$0.50 HC-$3.72 91P.

DESCRIPTORS- *ENRICHMENT PROGRAMS, *SUMMER PROGRAMS, *PROGRAM EVALUATION, *CHANGING ATTITUDES, *STUDENT IMPROVEMENT, DISADVANTAGED YOUTH, CURRICULUM DEVELOPMENT, TEACHER RESPONSIBILITY, MIDDLE CLASS VALUES, ACADEMIC ACHIEVEMENT, CREATIVITY, PSYCHOLOGICAL TESTS, BEHAVIOR RATING SCALES, PERSONAL VALUES, BOSTON EDUCATIONAL ENRICHMENT PROGRAM, GETZELS AND JACKSON MORALITY SCALE, INTERPERSONAL PERCEPTION TEST, THEMATIC APPERCEPTION TEST

AN EVALUATION OF A 6-WEEK SUMMER EDUCATIONAL ENRICHMENT PROGRAM FOR DISADVANTAGED STUDENTS RANGING FROM PRESCHOOL TO GRADE NINE FOUND THAT DESPITE THE SHORTNESS OF THE SESSIONS PROGRESS WAS MADE TOWARD REACHING THE GOALS OF THE PROGRAM. THE GOALS INCLUDED INCREASING STUDENTS' VERBAL AND NONVERBAL CREATIVITY, DEVELOPING STUDENT COOPERATION AND TOLERANCE, DEVELOPING MORE POSITIVE ATTITUDES TOWARD SCHOOL AND TOWARD AUTHORITY, AND BETTERING THE WORK HABITS OF THE STUDENTS. TEACHERS FOR THE 445 PARTICIPATING STUDENTS WERE DRAWN MOSTLY FROM THE INDEPENDENT SCHOOLS IN THE BOSTON AREA WHICH CONDUCTED THE PROGRAM. THE TEACHERS WERE GIVEN A SHARE OF THE RESPONSIBILITY FOR CURRICULUM DEVELOPMENT, TEACHING METHODS, DISCIPLINE, AND DAILY ROUTINE. THE CURRICULUM TRIED TO IMPROVE THE STUDENTS' READING ABILITY AND COMPREHENSION, WRITTEN AND ORAL EXPRESSION, AND UNDERSTANDING AND APPLICATION OF PRINCIPLES OF SCIENTIFIC INVESTIGATION AND DISCOVERY. ALL STUDENTS WERE PERFORMING AT GRADE LEVEL WHEN THE PROGRAM WAS INITIATED. THE PROGRAM WAS SUCCESSFUL IN INCREASING INTEREST IN INTELLECTUAL MATTERS, IN EMPHASIZING ETHICAL REWARDS OVER MATERIAL REWARDS, AND IN TEACHING THE MIDDLE CLASS VALUES OF NEATNESS, PUNCTUALITY, AND HONESTY. THE STUDENTS ALSO SHOWED MORE TOLERANCE FOR OTHERS, A GREATER WILLINGNESS TO COOPERATE, AND A SIGNIFICANT INCREASE IN CREATIVE THINKING. ADDITIONAL COPIES OF THIS DOCUMENT MAY BE OBTAINED FROM THE PUBLICATION OFFICE, LONGFELLOW HALL, APPIAN WAY, CAMBRIDGE, MASSACHUSETTS 02138. (DK)

ED018502

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Report Number 2

THE EFFECTS OF THE BOSTON EDUCATIONAL ENRICHMENT PROGRAM ON CHILDREN'S ATTITUDES, VALUES, AND CREATIVITY

Rebecca S. Vreeland

Center for Research and Development on
Educational Differences

Harvard University
Cambridge; Massachusetts

1967

UD 004 989

The research and development reported herein were performed pursuant to a contract (OE 5-10-239) with the Office of Education, U.S. Department of Health, Education, and Welfare, under the provisions of the Cooperative Research Program.

Additional copies may be obtained from the Publications Office, Longfellow Hall, Appian Way, Cambridge, Massachusetts 02138.

TABLE OF CONTENTS

I. THE BOSTON EDUCATIONAL ENRICHMENT PROGRAM..... 1

II. THE EVALUATION STUDY..... 3

The Sample..... 3

Instruments..... 4

Testing..... 6

Coding..... 6

III. DATA ANALYSIS AND FINDINGS..... 8

Verbal Creativity..... 8

Deferred Gratification Scale..... 15

Universalism Scale..... 15

Cooperation Scale..... 16

Getzels and Jackson Morality Scale..... 17

Interpersonal Perception Test..... 18

Verbal Speed Thinking Test..... 34

Conclusions: Interpersonal Perception and Verbal Speed Thinking Tests..... 36

TAT Test..... 37

Comparison of Changes on All Tests by EEP School Attended..... 45

Comparison of the Backgrounds of Children Who Were Differently Affected by the Program..... 48

Relationships Among Tests Measuring the Same Concepts..... 50

TABLE OF CONTENTS - continued

Analysis of Variables on Which the Children Showed Most Change..... 50

Determination of Groups of Children Differentially Affected by the Program..... 51

IV. SUMMARY OF CONCLUSIONS..... 55

V. SUGGESTIONS FOR FUTURE RESEARCH..... 58

REFERENCES..... 60

THE BOSTON EDUCATIONAL ENRICHMENT PROGRAM

In 1964, six independent schools in the Boston area set up the Boston Educational Enrichment Program under the sponsorship of the National Association of Independent Schools and the New England Association of Colleges and Secondary Schools. EEP was designed originally as a three-year pilot program to provide, at independent schools, six-week summer sessions of special study for qualified elementary and junior-high students from underprivileged Boston neighborhoods. It was financed by four large foundations: the Spaulding-Potter Charitable Trusts, the Committee of the Permanent Charity Fund, the Cabot Corporation, and the Ford Foundation. The summer of 1966, which saw the third and last session of EEP's first, experimental phase, provided the occasion for an evaluative study of the program's effectiveness. That research, which took the form of a pilot project, is the subject of this report. The purpose of the pilot study was to see whether any measurable changes did occur in the children which would make a full study worthwhile, and to develop relevant instruments for measuring such changes.

By 1966, EEP had grown to an enrollment of 445 students on four campuses, Milton Academy, Belmont Hill School, Shady Hill School, and Park School. The students, who ranged from preschool to grade nine, had a minimum I.Q. of 105 and were able to read at grade level.* Although this recruitment policy succeeded in producing a generally able group of youngsters, most of them lacked the experience of independent study and learning for its own sake, and very few of them had the kind of self-confidence that makes such learning possible. The EEP staff conceived of their primary task as "helping such children, in six weeks, to learn how to learn."**

About one-third of the teachers came from the Boston public schools which sent most of the children. Two-thirds of the teachers and most of the student aides came from the host schools or other independent schools. The teachers shared responsibility for curriculum development, teaching methods, discipline, and daily routine.

The curriculum stressed enrichment experiences in English and science, and the encouragement of creative potential. Specifically, the program tried to improve a student's ability in at least one of the following skills: reading ability and comprehension; fundamentals of

---

*These criteria were relaxed slightly in 1966, however, in accepting 10 per cent of the student-body on referral from community agencies.

**Edward Yeomans, Executive Secretary EEP, in his annual report 1966.

written and oral expression; and understanding and application of principles of scientific investigation and discovery. In addition, the curriculum and program as a whole attempted to develop the following attitudes: interest in reading for enjoyment and in man's natural environment and cultural activities; cooperation and tolerance; self-reliance and confidence; a spirit of inquiry and awareness; and a positive attitude toward school. The centers also offered a choice of creative activities, such as art and drama, and an organized sports program. In general, students were grouped heterogeneously by grades, although in some cases, less verbal students were grouped together for certain subjects.

THE EVALUATION STUDY

The pilot evaluation project was designed and directed by Dr. Rebecca S. Vreeland, lecturer on Social Relations at Harvard University and staff member of the Harvard Student Study, and was sponsored by the Harvard Center for Research and Development on Educational Differences. It had three purposes: to discover to what extent the EEP changed its students' attitudes and interests in a direction consonant with the goals of the program by comparing EEP children to a control group; to examine the characteristics of children most changed by the program; and to test several types of instruments as means of revealing such changes. Changes in academic skills were not studied since that area had already been the subject of a study conducted by Action for Boston Community Development.*

The major variables chosen for this study were based upon some of the program's major goals:

1. Creativity, verbal and nonverbal. Did students in the program increase their ability to ask relevant questions, respond originally to problems, and attack learning situations efficiently?

2. Cooperation and tolerance. Did they increase their ability to take another person's role; did they develop more interest in others; did their tendency to stereotypic thinking decline?

3. Attitudes toward educational and cultural activities. Did they develop a more positive attitude towards school and cultural opportunities?

4. The complex of concerns ordinarily referred to in sociological literature as the middle class value syndrome. Did they defer gratification more willingly; did their attitudes toward authority become more positive; did their concern for neatness, punctuality, and cleanliness increase; did they develop a sense of ethics more important than personal gain?

THE SAMPLE

The experimental sample consisted of five classes, 92 children in all. Class units were used so that the researcher could compare children who were under the common influence of one teacher or set of teachers. Classes selected were those in which most of the students had not been

---

*See "A Report on the Evaluation of the Educational Enrichment Program" (June, 1967), an unpublished report by Clarence E. Sherwood, Director of Research, Action for Boston Community Development, Inc.

in the program during previous summers. An attempt to maximize data on all the important variables that might affect the kinds of change being studied (i.e. age, school, and teaching technique) resulted in the following selection: children of junior-high-school age in two classes at Belmont Hill School and one at Milton Academy; children of late elementary-school age in one class at Shady Hill School; and the first-grade class at Park School.

The control group consisted of children attending a summer day camp sponsored by the Cooper Community Center. This recreational program did not attempt any "education;" its major goal was to provide children with enjoyable activities and outings and to keep them off the streets. Although it was the best available control group, it had many drawbacks. It was all Negro, whereas the EEP children were only about 50 per cent Negro. It had a lower average I.Q., since the EEP accepted only children who met standards of I.Q. and achievement above the average for Boston. The ages and sex of the Cooper children were not strictly comparable, since there were few children of junior-high-school age, and there were too few boys. Furthermore, the sample may have been biased in unknown ways because of poor testing conditions: it was difficult to keep the children from talking, and many did not show up for the final testing.

Nevertheless, as a control group, it had positive features in that the children came from roughly the same area of the city as the EEP children and many of the same schools. The home, neighborhood, and regular school circumstances of the two groups were similar. In addition, their parents were somewhat comparable to those of the EEP children in that they showed concern about their children's summer activity by finding a place for them to spend their time.

The ideal control group would be one which consisted of children who had been accepted for EEP but who could not come at the last minute. It would thereby duplicate the experimental sample by including the peculiar characteristics of people applying for, meeting the qualifications of, and planning to attend such a program. Unfortunately such a control group was not available.

INSTRUMENTS

Specific instruments to test the four variables described above were either adapted from earlier work or specially designed for this study. Tests of creative thinking were selected from the Minnesota Tests of Creative Thinking, described in E. Paul Torrance's Guiding Creative Talent (1962). The tests used were Drawing Completion, Unusual Uses, Mother Hubbard, Just Suppose, and Improvements. In each case, the specific content of the test differed from pretest to posttest. Strengths of these tests include (a) their irrelevance to I.Q., (b) their usefulness

with subjects of all ages, from preschool or, and (c) their standardized scoring.

Cooperation and tolerance, and attitudes toward educational and cultural activities were studied through several indirect testing instruments in order to research the usefulness of various approaches to the study of changes in attitudes. The Interpersonal Perception Test, created by Sanford M. Dornbusch (Hasdorf, Richardson, and Dornbusch, 1958) has proved satisfactory, with underprivileged children and college students, in providing information about attitudes of cooperation and tolerance of others (Stafford, 1958; Vreeland, 1960). Simply asking children to describe their classmates avoids the imposition of categories upon the children's responses. This test is also useful for eliciting attitudes toward school, using descriptions of teachers. An adaptation of Henry Murray's Thematic Apperception Test (Murray, 1938) was made using pictures with the following content: school, studying, cultural situations, Negro and white children, and adult-child relationships. Among the many advantages of using TAT's to study attitudes toward others, toward school and cultural activities, and toward middle class values are that they are not contaminated by peer-group influence or compliance set, and that they uncover many shadings of attitude.

A more conscious and verbal instrument used to measure these attitudes was a Sentence Completion Test adapted from Philip Jackson and Jacob Getzels (1962). A fourth test, a composite of several adaptations and some original items, elicited these attitudes using a multiple choice format. This test, called "What Should He Do? and Who Has the Best Idea?" asked children to pick the action that the person in each hypothetical situation should take. The stories were designed to measure the following values:

1. Deferred gratification (adapted from Mischel, 1961, 1961, 1958);

2. Particularism vs. universalism--a measure of the person's compliance with the demands of friends instead of the demands of law or ethics where a conflict between these demands exists (Stouffer, 1962); situations for this group were devised by the principal researcher;

3. Morality (Jackson and Getzels, 1962);

4. Value orientations (Kluckhohn, 1953);

5. Cooperation (written by the principal researcher).

In addition to these testing instruments, a strenuous schedule of observation was followed. To check behavioral change and to see whether

behavior related to change on tests, twenty children (of the 92 experimentals) were observed in all classes and on the playground every other day. Extensive notes on their behavior were made. To see what opinions, goals, and values were being transmitted, the teachers of all five classes were observed every other day; all statements of direction and evaluation were recorded using the observation schedule developed by Charles Bidwell of the Harvard Student Study (1959). The directors of the four schools and all the teachers of the sample classes, including the specialists such as art and music teachers, were also interviewed.

TESTING

The testing of the children in EEP and at Cooper Community Center was done during the first few days of their summer sessions and again during the last few days of the sessions. Obviously, a follow-up during the subsequent school year, had it been possible, would have provided valuable data necessary to assess the persistence of change. The present data, however, allow one to assess short-term change at least.

The administration of tests was handled by two assistants. The Park School children and the Cooper children of comparable age took the tests verbally; the older children wrote their responses to all tests, with the exception of the TAT responses by Shady Hill children, which were given verbally.

The amount of time devoted to the testing sessions differed according to the age of the child: the youngest Cooper children took their tests in a half-hour session; the middle, in an hour; the oldest, in one and a half hours; the youngest EEP children took their tests in a half hour; the Shady Hill children in one and a half hours; the Belmont and Milton children in two hours.

CODING

In general, the coding of these instruments had to be specifically devised or adapted because they had not previously been used for these purposes. All of the codes were created by the chief researcher. The coding developed was empirical (to prevent categories being imposed on the data) and specific (to allow future researchers to use the codes and regroup the categories to test for other attitudes). The coding was kept as close to the data as possible. A computer was used to group the specific categories into various general concepts which could be used as variables to test hypotheses.

The reliability coefficient of the code used in scoring the verbal creativity items derived from the Minnesota Creativity Battery was 96 per cent. The nonverbal creativity test, Drawing Completion, however,

has yet to be scored. The code for the Interpersonal Perception test was adapted from a study of handicapped children (Stafford, 1958) and a study of Tufts and Radcliffe girls (Vreeland, 1960) and had a 91 per cent reliability coefficient. The TAT empirical code was adapted from one designed for the Harvard Student Study (Bidwell and Vreeland, 1966) and had a reliability coefficient of 85-95 per cent, depending upon the story. The Sentence Completion code was designed by the principal researcher and had a 92 per cent reliability coefficient. The interviews and observations have yet to be scored. All of the coding was done by the chief researcher and two assistants trained by her. The specific indices developed for the various tests will be discussed with the analysis of the data from each test.

DATA ANALYSIS AND FINDINGS

VERBAL CREATIVITY

The children's responses to the items derived from the Minnesota Creativity Battery were weighted using a combination of frequency (low frequency received high weight), flexibility, specificity, and possibility, following ideas proposed by Torrance and incorporating the same principles that Mednick used in developing the RAT test of creativity for college students (1961, 1962).

JUNIOR-HIGH CHILDREN. The children were given four verbal creativity tasks: to write improvements for three objects and to suggest some new uses for one object. The objects used in the first testing sessions were different in the retesting session.

VERBAL CREATIVITY TEST	FIRST TESTING	SECOND TESTING
IMPROVEMENTS I	Bicycles	Coats
IMPROVEMENTS II	Shoes	Telephones
IMPROVEMENTS III	Clothes	Skates
USES OF	Tin cans	Cardboard boxes

The average creativity score for each of the four tasks at the two time points is plotted in Charts A to D. Chart E presents the total creativity score on all four tasks.

For ease in reading, all charts in this research report are set up the same way. The diagonal dotted line running from the upper right to the lower left-hand corner of the charts is an equivalence line. Individuals above this line had creativity scores that went down during the summer. Individuals below this line had scores which went up during the summer. The crossed solid lines represent the intersection of the means at the two time points. Individuals in the upper left quadrant were above the mean at Time 1 and below the mean at Time 2.* Those in the lower left quadrant were below the mean at both Time 1 and Time 2. Individuals in the top right-hand quadrant were above the mean at Time 1 and Time 2. Those in the bottom right-hand quadrant were below the mean at Time 1 and above it at Time 2.

---

*Time 1 is the initial testing at the beginning of the summer. Time 2 is the final testing at the end of the summer.

In addition, some of the charts code individuals by race, sex, and school to allow for comparison of many groups. All the comparisons in each chart have been checked for statistical significance. The race, school, or sex subgroup comparisons were not significant on this test for verbal creativity.

The junior-high EEP children, as a group, however, differ significantly from their controls at Cooper Community Center in their verbal creativity (x^2 on total creativity score* significant at .01 level comparing the right and left halves of the chart). On most of the creativity variables, very few of the Cooper children were below the mean at Time 1 and above the mean at Time 2. In fact, the Cooper children were almost all below the mean at both Time 1 and Time 2. No more than one Cooper child is in the bottom right quadrant on any of the charts, in contrast to about one-third of the EEP children who are in that quadrant on most of the charts.

ELEMENTARY-SCHOOL CHILDREN. These children were given two Just Suppose situations and asked to describe the consequences of these hypothetical situations. In addition, they were asked to suggest new uses for one object. The methods of charting and coding are identical to those used above.

1. Just Suppose Situation #1 (Chart F). Although the difference between the means for the two groups is not significant at Time 1, at Time 2 the difference between the number of Cooper children and Shady Hill children above the mean is significant. More Shady Hill children scored above the mean on verbal creativity at the end of the summer.

TABLE 1

NUMBER OF CHILDREN ABOVE AND BELOW THE MEAN OF CREATIVITY TEST #1

	Time 1		Time 2	
	Below $\bar{x}$	Above $\bar{x}$	Below $\bar{x}$	Above $\bar{x}$
EEP	7	17	8	16
Cooper	5	2	6	1

$x^2 = 2.47$
Not significant at .05 level.

$x^2 = 6.6$
Significant at .05 level.

*The total verbal creativity score is a summation of the creativity scores on the three separate tasks.

However, since most of the children at Shady Hill who were above the mean at Time 2 were also above the mean at Time 1, the change patterns should be examined to clarify the findings.

TABLE 2

NUMBER OF CHILDREN WHOSE CREATIVITY SCORE CHANGED DURING THE SUMMER

	Change Down	Change Up
EEP	10	13
Cooper	3	4

The difference between the two groups on the number of changers is not statistically significant. The only children, however, who were below the mean at Time 1 and above the mean at Time 2 were six EEP children. No significant differences among the Shady Hill children with regard to race or sex showed on this test.

2. Just Suppose Situation #2 (Chart G). On this test of creativity, the means of the EEP and Cooper groups are not significantly different. The number of EEP children above the mean is significantly higher, however, at Time 2 as can be seen from Table 3.

TABLE 3

NUMBER OF CHILDREN ABOVE AND BELOW THE MEAN OF CREATIVITY TEST #2

	Time 1		Time 2	
	Below $\bar{x}$	Above $\bar{x}$	Below $\bar{x}$	Above $\bar{x}$
EEP	11	14	10	15
Cooper	6	1	7	0
	$x^2 = 2.3$		$x^2 = 7.62$	
	Not significant at .05 level.		Significant at .01 level.	

The results from this test are almost the same as the Just Suppose #1. More EEP children were above the mean at the end of the summer, although the two groups were not significantly different at the beginning of the summer. In addition, significantly more EEP children changed toward higher scores during the summer. Again, there were no significant differences among the EEP children when divided according to race or sex, although the EEP boys were generally above the mean at both time points on this task.

3. Uses of Tin Cans and Cardboard Boxes (Chart H). The difference in means for the EEP and Cooper groups is not significant. The figures for Time 1, however, show that the numbers of Cooper children below the mean is significantly greater than the numbers of EEP children.

TABLE 4

NUMBER OF CHILDREN ABOVE AND BELOW THE MEAN OF CREATIVITY TEST #3

	Time 1		Time 2	
	Below $\bar{x}$	Above $\bar{x}$	Below $\bar{x}$	Above $\bar{x}$
EEP	7	17	8	16
Cooper	6	0	2	4

$x^2 = 7.9$
Significant at .01 level.

$x^2 = 0.0$
Not significant at .05 level.

In fact, examining the figures for Time 2 reveals that the Cooper children changed more on this task than did the EEP children. Of the nine children who were above the mean at Time 2, but below it at Time 1, four were from Cooper (or 66 per cent of the Cooper children), and five from EEP (or 20.8 per cent of the EEP children), making the two groups not significantly different at Time 2.

Comparing the EEP and Cooper children as to direction of change on this scale of verbal creativity gives the following table:

TABLE 5

NUMBER OF CHILDREN WHOSE CREATIVITY SCORE CHANGED DURING THE SUMMER

	Change Down	Change Up
EEP	11	13
Cooper	2	4

Although the differences between the groups are not significant, a higher percentage of Cooper children of this age changed up (or became more verbally creative over the summer) than EEP children of this age. Again, there are no significant differences among the EEP children by race or sex, although the boys were generally above the mean at both time periods.

4. Total Verbal Creativity Scale. A graph of the total verbal creativity score (the sum of the three individual scores) of the elementary-school

children (Chart I) shows essentially the same results as the three individual creativity scores.

TABLE 6

NUMBER OF ELEMENTARY-SCHOOL CHILDREN ABOVE AND BELOW THE MEAN OF THE TOTAL CREATIVITY SCALE

	Time 1		Time 2	
	Below $\bar{x}$	Above $\bar{x}$	Below $\bar{x}$	Above $\bar{x}$
EEP	10	15	11	14
Cooper	6	0	6	0

$x^2 = 7.61$ Significant at .01 level.

$x^2 = 6.08$ Significant at .05 level.

A comparison of the direction of change in the total verbal creativity scores for the two groups gives the following results:

TABLE 7

NUMBER OF ELEMENTARY-SCHOOL CHILDREN WHOSE TOTAL CREATIVITY SCORE CHANGED DURING THE SUMMER

	Change Down	Change Up
EEP	7	17
Cooper	1	5

x^2 not significant at .05 level.

These findings show that these EEP children were more creative at the end of the summer than these Cooper children. However, they were more creative than the Cooper children at the beginning of the summer. The program does not appear to have made much change in the creativity of these EEP children. Nevertheless, all of these children who were below the mean at Time 1 and above it at Time 2 were in the EEP program, and all of these Cooper Community children were below the mean at both time points. Chart I indicates that the Shady Hill children were generally more verbally creative initially and showed some change toward greater verbal creativity during the summer. The Cooper children were less creative at the beginning, and, although most of them became more creative during the program, they were still below the mean at the end of the summer.

EARLY GRADE-SCHOOL CHILDREN. The youngest children in the study took two verbal creativity tests: Mother Hubbard, in which they were asked to supply an ending to the story, and the unusual uses of tin cans and cardboard boxes, which all the other children took.

1. Mother Hubbard (Chart J). Comparison of the EEP and Cooper children on this test shows the following results:

TABLE 8

NUMBER OF CHILDREN ABOVE AND BELOW THE MEAN OF CREATIVITY TEST #1

	Time 1		Time 2	
	Below $\bar{x}$	Above $\bar{x}$	Below $\bar{x}$	Above $\bar{x}$
EEP	6	9	9	6
Cooper	8	3	6	5

x^2 not significant at .05 level.

The two groups of children were not significantly different in their verbal creativity scores at either the beginning or the end of the summer. The task for the second testing, supplying an ending to "Hi Diddle, Diddle" (supposedly comparable), was actually more difficult for these children, as evidenced by the lower mean at Time 2. Almost half of the Cooper children, however, were below the mean at Time 1 and above it at Time 2, showing great change upward in verbal creativity, whereas only 13 per cent of these EEP children changed from below to above the mean during the summer.

Comparing the two groups on the direction of change generates the following table:

TABLE 9

NUMBER OF CHILDREN WHOSE CREATIVITY SCORE CHANGED DURING THE SUMMER

	Change Down	Change Up
EEP	11	4
Cooper	4	7

$x^2 = 3.97$ Significant at .05 level.

Significantly more Cooper than EEP children changed toward greater

verbal creativity during the summer on this particular task.

2. Uses of Tin Cans and Cardboard Boxes (Chart K). No significant differences between the two groups appeared on this measure of verbal creativity as the following table indicates.

TABLE 10

NUMBER OF CHILDREN ABOVE AND BELOW THE MEAN OF CREATIVITY TEST #2

	Time 1		Time 2	
	Below $\bar{x}$	Above $\bar{x}$	Below $\bar{x}$	Above $\bar{x}$
EEP	10	5	10	5
Cooper	8	5	5	8

x^2 not significant at .05 level.

Although on this task, as on the Mother Hubbard task, the two groups of children were not significantly different at either time point, the Cooper children were generally more creative at the end of the summer. They also changed more during the summer than the EEP children. For example, over half the Cooper children were below the mean at Time 1 and above the mean at Time 2, while the comparable figure for the Park School children is 20.6 per cent.

The figures for direction of change show the same pattern. The children, as a group, had higher scores on this test at the end of the summer, but more Cooper children than EEP children changed toward greater verbal creativity (although the change is not statistically significant).

TABLE 11

NUMBER OF CHILDREN WHOSE CREATIVITY SCORE CHANGED DURING THE SUMMER

	Change Down	Change Up
EEP	6	9
Cooper	2	11

x^2 not significant at .05 level.

No significant differences among these EEP children by race or sex were present on either of the verbal creativity tasks.

CONCLUSION. The two older groups of EEP children were verbally more creative initially and changed somewhat more often than the Cooper children toward greater verbal creativity during the course of the EEP program. The comparable control groups of Cooper children generally were less creative at the beginning of the summer and generally did not change during the summer. The difference between the Cooper and FEP groups was more outstanding at the upper-age level.

The findings for the comparison of the Park School children and their comparable age group from Cooper Community Center, however, show a completely opposite picture of the effects of the EEP program. More Cooper children than Park School children were above the mean on verbal creativity at the end of the summer. This finding resulted from substantial changes in creativity among these Cooper children and little change among the Park School children. In fact, on one task, more than twice as many Park School children became less verbally creative as became more creative during the summer, while almost the opposite figures are true for the comparable Cooper children.

It is not clear at this stage in the analysis why the EEP program at Park School had effects on creativity which were the opposite of the EEP programs at other schools. Hopefully, further analysis will shed some light on this problem.

DEFERRED GRATIFICATION SCALE

This scale* is not a good one to include in future studies of this kind because it shows almost no variance in the responses of the children. Many of them picked the deferred gratification alternative on all the scales, and most of the rest chose it on all but the item concerning the purchase of a phonograph "on time." The few children who did pick the immediate gratification alternative on other items are evenly distributed across race, sex, and school. There were a few more such responses from the Cooper control group at the beginning of the summer, reflecting the initial differences between the samples. Although the mean dropped slightly over the summer, indicating a slight trend toward more emphasis on immediate satisfaction, the shift is not statistically significant. Evidently the EEP children were already oriented toward deferred gratification when they came and generally remained so.

UNIVERSALISM SCALE

Chart L shows that in general the children* became slightly more oriented

---

*This instrument was administered to the junior-high-school children only.

to the demands of their friends (particularism) than to the rules of society (universalism) during the summer. But the shift in the mean is slight and not statistically significant. At least a third of the children had exactly the same score both times. In general, these children were very universalistically oriented. The intersection of the means is in the top quintile of the distribution. Careful inspection of the chart reveals no significant differences among children defined by race, sex, school* within the EEP program, or control group.

The findings from both the Deferred Gratification and Universalism Scales suggest that the children in the EEP program did not change much in the direction of the middle class values which these instruments were designed to measure because their values were already middle class when they entered the program. Of course, one can argue that the children simply chose the alternative which they thought would please the teacher (a practice which, incidentally, reflects a middle class attitude). The only way to refute this argument is to examine the consistency of responses across different types of tests. Preliminary analysis of the TAT stories, with their themes of orientation to the "right" behavior, misbehavior, guilt, and punishment, provides convincing corroboration of the findings on the Deferred Gratification and Universalism Scales.

COOPERATION SCALE

This scale** could be called an altruism scale since it measures willingness to help someone else to one's own disadvantage. As can be noted from Chart M, the mean of the whole sample did not change from Time 1 to Time 2. Most of the children (62.2 per cent) either raised their scores or kept them the same. This holds true for both the Cooper control group and the EEP children, although the EEP group had higher scores at both times.

There are no differences among the EEP children in terms of race or EEP school. It is interesting to note, however, that the girls in the program were much more cooperative than the boys. If one compares the number of children in the two sex groups below and above the mean at Time 2 the following table emerges:

---

*All such comparisons in the report refer to EEP children only. The Cooper sample was too skewed to allow any race or sex comparisons within that group.

**Administered to junior-high-school children only.

TABLE 12

NUMBER OF CHILDREN ABOVE AND BELOW THE MEAN OF THE COOPERATION SCALE

	Time 1		Time 2	
	Below $\bar{X}$	Above $\bar{X}$	Below $\bar{X}$	Above $\bar{X}$
Boys	10	9	11	8
Girls	4	16	5	15
	$x^2 = 3.9$		$x^2 = 4.3$	
	Significant at .05 level.		Significant at .05 level.	

The difference between boys and girls at both time points is significant. The girls were, indeed, more cooperative, but generally at both time periods. In fact, nine girls, or 45 per cent, and eight boys, or 42 per cent, changed toward being more competitive during the summer.

Although the girls in the EEP appear to have been more cooperative than the boys (at least as measured by this scale), one cannot argue that the EEP program changed either group toward or away from helping others.

Possibly the skewed sex distribution in the control group masks some real differences between the Cooper and EEP children for scales on which girls scored much higher than boys. The control children were almost all girls, which would make that group score higher than might be expected with a normal distribution. The answer to this question will have to wait for future research with a more adequate control group.

GETZELS AND JACKSON MORALITY SCALE*

The junior-high-school children in the control group were less ethical according to this scale than those in the EEP. That they changed just as much during the summer, however, suggests possibly an artifact of retesting rather than any effect the EEP program had on its participants.

Again, there are no differences in the change patterns by race or EEP school, but there were substantial differences in the effects the EEP program had on boys compared to girls. The girls were significantly more "moral" at the end of the summer, as measured by this scale.

---

*See Chart N.

TABLE 13

NUMBER OF CHILDREN ABOVE AND BELOW THE MEAN OF THE MORALITY SCALE AT TIME 2

	Time 2	
	Below $\bar{x}$	Above $\bar{x}$
Girls	5	17
Boys	11	6

$x^2 = 6.7$ Significant at .01 level.

Not only did the girls in the EEP program have significantly higher morality scores at the end of the summer, but they also changed during the course of the summer, as can be seen from Table 14.

TABLE 14

NUMBER OF CHILDREN WHOSE MORALITY SCORE CHANGED DURING THE SUMMER

	Change Down	Change Up
Girls	8	14
Boys	12	5

$x^2 = 4.53$ Significant at .05 level.

They became more "moral" during the summer, according to the scale. The girls in the control group, however, showed no comparable change. Apparently, the EEP program had a substantial effect upon the girls. It is quite possible that the program would have had comparable results in the areas of universalism and cooperation if the girls had not already been at the top of the scale at the beginning of the summer, that is, if they had had room for upward change. Although no particular explanation is evident for this discrepancy in the effects of the program upon the boys and girls, from what we know about girls' deference to authority and value on conformity, it seems reasonable to find that they were more affected by the program's goals than were the boys.

THE INTERPERSONAL PERCEPTION TEST

This test asks the child to write down the first ten things that come into his mind about four persons: his best friend, a teacher he has had, the person in front of him, and himself.

The statements each child made about the people on the test were

categorized by content and by affect (positive, negative, or neutral). From the content and affect of the statements, many different variables can be derived. For the purpose of evaluating the EEP program, the study concentrated on the following variables derived from the forty responses each child gave. The EEP children were expected to show change on these variables if their values, opinions, and attitudes were affected by the program. The direction of change expected for the EEP children is stated at the beginning of the description of each variable. The Cooper control group were expected to show no change.

1. PERCENTAGE OF POSITIVE STATEMENTS ABOUT THE TEACHER. The hypothesis was that the number of statements the EEP children made in this category would be greater at the end of the summer as the children were confronted with the understanding, interesting, and competent teachers in the program.

TABLE 15

MEAN PERCENTAGES OF POSITIVE STATEMENTS ABOUT TEACHERS

	Time 1	Time 2
EEP	38.48	38.55
Cooper	42.36	29.53

T not significant at .05 level.

No significant difference between the two groups appeared at either time point.

Comparing the mean percentages of these statements by the race and sex groups of the EEP children reveals no significant differences, although the Negro girls evaluated their teachers most positively and the white boys least positively.

TABLE 16

MEAN PERCENTAGES OF POSITIVE STATEMENTS ABOUT TEACHERS, BY RACE AND SEX

	Time 1	Time 2
White Girls	39.3	31.2
Negro Girls	52.7	41.7
White Boys	14.7	29.6
Negro Boys	30.4	37.1

One may note that for many of the variables to be described in this report, the different groups of children were farther apart at Time 1 than at Time 2. This convergence on the mean is an expected retest phenomenon. Unless there are differences among groups in their movement over time, one cannot draw any positive conclusions about the effects of the program.

Although there are no significant differences between the group means the positive evaluation of the teacher is an important variable. Therefore the results are graphed on Chart 0 and the number of children above and below the mean at the two time points is compared in Table 17.

TABLE 17

NUMBER OF CHILDREN ABOVE AND BELOW THE MEAN ON USE OF POSITIVE STATEMENTS ABOUT TEACHERS

			Time 2	
			Below $\bar{x}$	Above $\bar{x}$
	Cooper	Above $\bar{x}$	6	2
		Below $\bar{x}$	3	1
Time 1				
	EEP	Above $\bar{x}$	11	18
		Below $\bar{x}$	18	13

x^2 not significant at .05 level.

The EEP and control groups had different patterns of change. Six Cooper children changed in their percentage of positive evaluations of teachers from above to below the mean during the summer, while only one child went from below to above the mean. In contrast, the pattern for the EEP children shows that more of them changed their evaluation from below to above the mean than vice versa. These differences are not statistically significant, however, and could have occurred by chance.

The difference could also be attributed to the different sex composition of the experimental and control groups, since boys and girls changed in different directions on this variable. Chart 0 indicates that the means of the girls dropped during the summer while those of the boys went up. A comparison of the number of EEP boys and girls who changed up and down results in the following table:

TABLE 18

NUMBER OF CHILDREN WHO CHANGED PERCENTAGE OF POSITIVE STATEMENTS ABOUT TEACHERS DURING THE SUMMER

	Change Toward Fewer	Change Toward More
Boys	9	19
Girls	21	13

x^2 not significant at .05 level.

This finding suggests that the program had a different effect on the girls and boys. On this variable, however, the girls changed in the opposite direction from the goals of the program. There were no differences by race.

2. PERCENTAGE OF STATEMENTS DESCRIBING THE TEACHER AS DEMANDING OR PERMISSIVE. Many of the children described the teacher as demanding or permissive, for example, "She lets us play" or "She makes us do too much." The hypothesis was that exposure to EEP teachers would reduce the percentage of the descriptions devoted to such statements and the children would see teachers as something more than demanding or permissive lawmakers. The mean percentages follow:

TABLE 19

MEAN PERCENTAGES OF "DEMANDING" STATEMENTS USED IN DESCRIPTIONS OF TEACHE

	Time 1	Time 2
EEP	7.9	7.2
Cooper	12.8	9.1

T not significant at .05 level.

The differences between means of the two groups are not significant. This variable is graphed in Chart P. A comparison of numbers of EEP and Cooper children who changed in various directions and comparisons of the race and sex groups also are not significant.

3. PERCENTAGE OF NEGATIVE STATEMENTS ABOUT THE TEACHER. It was expecteo that as the percentage of positive statements in the description of the teacher went up over time, the percentage of negative statements would go down. The mean percentage of negative statements about teachers which the Cooper and EEP children used at Time 1 and Time 2 are as follows:

TABLE 20

MEAN PERCENTAGES OF NEGATIVE STATEMENTS ABOUT TEACHERS

	Time 1	Time 2
EEP	17.0	17.4
Cooper	9.7	9.3

T not significant at .05 level.

The means of the two groups are not significantly different at either time period, and there was very little change during the summer. This variable is graphed in Chart Q. Comparing the number of Cooper and EEP children above and below the mean at both time points again shows very little difference between the two groups, as indicated in the following table.

TABLE 21

NUMBER OF CHILDREN ABOVE AND BELOW THE MEAN ON USE OF NEGATIVE STATEMENTS ABOUT TEACHERS

			Time 2	
			Below $\bar{x}$	Above $\bar{x}$
	Cooper	Above $\bar{x}$	0	3
		Below $\bar{x}$	7	2
Time 1				
	EEP	Above $\bar{x}$	10	15
		Below $\bar{x}$	26	10

x^2 not significant at .05 level.

The pattern of change also shows little difference between the number of children who changed in different directions on this variable.

TABLE 22

NUMBER OF CHILDREN WHOSE PERCENTAGE OF NEGATIVE STATEMENTS CHANGED DURING THE SUMMER

	Decreased	Increased
Cooper	10	2
EEP	36	25

x^2 not significant at .05 level.

There were no significant differences between the race or sex groups of EEP children on this variable, although more girls than boys changed to making fewer negative statements when describing their teachers at the end of the summer.

TABLE 23

NUMBER OF CHILDREN WHOSE PERCENTAGE OF NEGATIVE STATEMENTS CHANGED DURING THE SUMMER, BY SEX

	Decreased	Increased
Girls	22	12
Boys	12	15

In fact, the girls made fewer positive and negative statements about their teachers at the end of the summer than they did at the beginning. They tended instead to increase their use of neutral statements to describe teachers. The following table compares the mean percentage of neutral statements at the two time points by race and sex groups.

TABLE 24

MEAN PERCENTAGES OF NEUTRAL STATEMENTS ABOUT TEACHERS

	Time 1	Time 2
White Girls	38.6	43.1
Negro Girls	31.2	38.7
White Boys	54.4	40.3
Negro Boys	37.6	38.4

T not significant at .05 level.

The differences are not significant but suggest that the EEP boys and girls reacted differently to their summer teachers.

4. TOTAL PERCENTAGE OF POSITIVE STATEMENTS. It was also hypothesized that the EEP experience might help these children to see the world in more positive terms. The total percentage of positive statements across all descriptions might be expected to increase over the summer. The mean percentages of positive statements in the children's descriptions at the two time points are shown in the following table.

TABLE 25

MEAN PERCENTAGES OF POSITIVE STATEMENTS

	Time 1	Time 2
Cooper	43.8	33.2
EEP	39.7	36.0

T not significant at .05 level.

There were no significant differences between the EEP and Cooper groups and no significant change over time. In addition, there were no significant differences in the total percentage of neutral statements (a measure of maturity*) over time.

TABLE 26

MEAN PERCENTAGES OF NEUTRAL STATEMENTS IN CHILDREN'S DESCRIPTIONS

	Time 1	Time 2
Cooper	48.7	49.0
EEP	49.6	52.8

T not significant at .05 level.

The total percentage of positive statements used by the children

---

*The designation of this figure as a measure of maturity is based on the differences in the use of the category between college students and children. See Stafford (1958) and Vreeland (1960).

at both time points is graphed in Chart R. Counting the number of children who were above and below the mean at both time points also shows no significant difference between the EEP and Cooper children.

Significant differences in the direction of the changes in the girls' use of positive statements compared to the boys' did occur during the summer.

TABLE 27

NUMBER OF CHILDREN WHOSE PERCENTAGE OF POSITIVE STATEMENTS CHANGED DURING THE SUMMER

	Decreased	Increased
Boys	12	15
Girls	23	11

$x^2 = 4.1$ Significant at .05 level.

This finding should be interpreted carefully. It does not suggest that the boys used many more positive statements at Time 2, but rather that they had a fairly stable pattern in contrast to the girls who used fewer positive statements at the end of the program. Another word of caution must be added. Although the girls did use fewer positive statements at Time 2, they were higher (although not significantly) at the beginning of the summer than the boys, as can be seen from the following means:

TABLE 28

MEAN PERCENTAGES OF POSITIVE STATEMENTS IN CHILDREN'S DESCRIPTIONS

	Time 1	Time 2
White Girls	40.3	34.2
Negro Girls	53.1	44.5
White Boys	21.7	23.3
Negro Boys	46.6	40.2

The boys and girls also differed in the percentage of their descriptions devoted to neutral statements, although the means are not significantly different as can be seen from the following table.

TABLE 29

MEAN PERCENTAGES OF NEUTRAL STATEMENTS IN CHILDREN'S DESCRIPTIONS

	Time 1	Time 2
White Girls	38.6	43.2
Negro Girls	31.4	38.1
White Boys	54.3	46.3
Negro Boys	35.6	37.4

T not significant at .05 level.

The change pattern in the use of neutral statements for the boys and girls is significantly different.

TABLE 30

NUMBER OF CHILDREN WHOSE PERCENTAGE OF NEUTRAL STATEMENTS CHANGED DURING THE SUMMER

	Decreased	Increased
Boys	13	14
Girls	5	29

$x^2 = 6.4$ Significant at .05 level.

Together, these last two findings reveal that the girls increased their use of neutral statements during the summer at the expense of the evaluative statements. The boys did not do much changing at all unless one considers a slight tendency to use more negative statements in their descriptions. The mean percentages of negative statements confirm this result.

TABLE 31

MEAN PERCENTAGES OF NEGATIVE STATEMENTS IN CHILDREN'S DESCRIPTIONS

	Time 1	Time 2
White Girls	12.7	10.5
Negro Girls	9.2	8.5
White Boys	8.3	14.3
Negro Boys	7.1	11.2

5. PERCENTAGE OF POSITIVE STATEMENTS USED IN SELF-DESCRIPTION (Chart S). Another major hypothesis of the study was that the EEP children would gain greater self-confidence during the summer. One way of testing this hypothesis is to see whether their self-evaluation (as measured by frequency of use of positive statements in the self-descriptions) became more positive during the course of the summer.

TABLE 32

MEAN PERCENTAGES OF POSITIVE STATEMENTS IN CHILDREN'S SELF-DESCRIPTIONS

	Time 1	Time 2
Cooper	34.7	21.7
EEP	31.8	27.6

T not significant at .05 level.

TABLE 33

MEAN PERCENTAGES OF NEGATIVE STATEMENTS IN CHILDREN'S SELF-DESCRIPTIONS

	Time 1	Time 2
Cooper	4.3	19.0
EEP	9.3	8.0

T not significant at .05 level.

TABLE 34

MEAN PERCENTAGES OF NEUTRAL STATEMENTS IN CHILDREN'S SELF-DESCRIPTIONS

	Time 1	Time 2
Cooper	24.0	32.6
EEP	41.0	45.4

T not significant at .05 level.

As can be seen from the three tables above, neither the group differences nor the changes over time are statistically significant for either positive, negative, or neutral statements. Comparing the Cooper and EEP children on the direction of change again shows no differences between these two groups. However, the racial composition of the control group may again be masking real differences among the groups. Unfortunately,

delineating the effects of race and EEP will have to wait for future research.

There were no significant differences between the boys and girls on this variable. The Negro children, however, had a more positive self-conception at both time periods, and, in addition, showed a different change pattern.

TABLE 35

NUMBER OF CHILDREN BELOW AND ABOVE THE MEAN ON PERCENTAGE OF POSITIVE STATEMENTS IN SELF-DESCRIPTION

			Time 2	
			Below $\bar{x}$	Above $\bar{x}$
	White	Above $\bar{x}$	6	2
		Below $\bar{x}$	14	5
Time 1				
	Negro	Above $\bar{x}$	3	12
		Below $\bar{x}$	8	6

Comparing the racial groups at Time 2 (Table 35) reveals significant differences at the .01 level. It is evident from the change patterns that the Negroes did not experience a dramatic shift in positive conception of the self during the summer, but rather were above the mean at both time points. (Some used fewer positive self statements at Time 2 but remained above the mean.)

TABLE 36

NUMBER OF CHILDREN WHOSE PERCENTAGE OF POSITIVE STATEMENTS IN SELF-DESCRIPTIONS CHANGED DURING THE SUMMER

	Decreased	Increased
Negroes	16	11
Whites	15	14

x^2 not significant at .05 level.

The EEP program did not substantially affect the already high positive opinion of self that its Negro students had when they came to school.

6. PERCENTAGE OF STATEMENTS CATEGORIZED AS PHYSICAL DESCRIPTION. One of the most obvious ways to describe other people is to use purely physical criteria. The use of physical description distinguished the two age groups which had been used for previous studies with this test. The college girls used far fewer physical description statements than did the Fresh Air Fund campers.* It was hypothesized that during the summer the EEP children might become more imaginative in their descriptions of others, and use fewer physical description statements. The means follow:

TABLE 37

MEAN PERCENTAGES OF PHYSICAL DESCRIPTION STATEMENTS

	Time 1	Time 2
Cooper	29.0	32.3
EEP	23.6	26.7

T not significant at .05 level.

The hypothesis was not confirmed as can be seen from Table 37. There were no significant changes over time and no significant differences between the two groups. The breakdowns by sex and race also showed no significant differences. The results are graphed on Chart T.

7. PERCENTAGE OF STATEMENTS CONCERNED WITH INTELLECTUAL MATTERS. One of the major goals of the EEP program was to make the children aware of and concerned with intellectual matters. All of the statements that had anything to do with intellectual matters were abstracted from the children's descriptions of others. For example, "He is smart" and "I like to read" were considered intellectual statements. The mean percentage of statements showing intellectual concern used by Cooper and the EEP children follow:

TABLE 38

MEAN PERCENTAGES OF "INTELLECTUAL" STATEMENTS IN CHILDREN'S DESCRIPTIONS

	Time 1	Time 2
Cooper	7.0	3.6
EEP	11.4	12.8

T significant at .05 level (Time 2).

*Compare Vreeland (1960) with Stafford (1958).

The Cooper and EEP means are significantly different at Time 2, but not at Time 1.

The results are graphed in Chart U. The numbers of children who changed in various directions confirm the results of the T test above. Since the T test is a more powerful statistic, the other data are not presented.

8. MIDDLE CLASS CONCERN. Statements which describe people in terms of middle class virtues (neat, clean, honest, obedient) were abstracted from the Interpersonal Perception Test. It was hypothesized that the use of such statements would be higher for the EEP children than for the Cooper children and would increase for the EEP group during the summer. The means follow:

TABLE 39

MEAN PERCENTAGES OF "MIDDLE CLASS" STATEMENTS IN CHILDREN'S DESCRIPTIONS

	Time 1	Time 2
Cooper	6.1	2.2
EEP	9.77	12.28

T significant at .05 level (Time 2).

The means are significantly different at Time 2 but not at Time 1, confirming the hypothesis.

9. CONCERN WITH SELF. This is another index of maturity.* The more mature the person, the less likely he is to describe others in terms of what they do for or to him, for example, "He helps me," "She is mean to me," and so forth. It was hypothesized that the EEP children would be less concerned with self or more mature on this variable than the Cooper children, and that their concern with self would decrease during the summer. The means of the percentage of statements concerned with self used by the two groups follow:

*Compare Stafford (1958) and Vreeland (1960).

TABLE 40

MEAN PERCENTAGES OF "CONCERN-WITH-SELF" STATEMENTS IN CHILDREN'S DESCRIPTIONS

	Time 1	Time 2
Cooper	17.94	18.13
EEP	14.31	13.15

T not significant at .05 level.

There were no significant differences between the two groups and no significant changes over time. This variable is graphed in Chart V. There were also no significant differences in the numbers of Cooper and EEP children above and below the mean at the two time points., In addition, there were no significant differences in the direction of change. Although the Negroes were generally more concerned with self at both time periods, there were no statistically significant differences among the races, sexes, or EEP schools on this variable.

In these two measures of maturity, based on responses to the Interpersonal Perception Test, the first (percentage of neutral statements) showed no overall differences between the EEP and Cooper children, but suggested a tendency for the EEP girls to increase their use of neutral statements during the summer. The second measure (concern with self) also showed no differences between the Cooper and EEP groups, race, or sex groups. The third measure of maturity, described below, did show differences between the EEP and Cooper children.

10. THE BEST FRIEND SEEN AS A SELF. It has been found previously that the more mature the subject, the more he is able to describe other people in terms of that person's likes and dislikes, ambitions, desires, and accomplishments.* Therefore, if the EEP children became more mature, as a result of the program, they would make more statements describing their best friends as "real selves," not extensions of the describer.

The mean percentages of statements describing the best friend as a self used by the Cooper and EEP children follow:

---

*See Vreeland (1960) and Stafford (1958).

TABLE 41

MEAN PERCENTAGES OF "SELF" STATEMENTS IN CHILDREN'S DESCRIPTIONS OF BEST FRIENDS

	Time 1	Time 2
Cooper	6.36	2.26
EEP	14.63	15.78

T significant at .001 level.

The means of the Cooper and EEP children were significantly different at both time points. In addition, the Cooper children used fewer of these statements at Time 2 than they did at Time 1 while the opposite occurred among the EEP children. There were no significant differences between the boys and girls on this variable. The boys were higher at Time 1 but both groups converged on the mean at Time 2.

11. CHANGES IN ATTITUDES TOWARD OTHER RACES. All of the EEP children, except the youngest group, were asked to describe the person in front of them. It was felt that a comparison of the categories of statements used to describe people of different races and sexes at both time periods would be a better test of changes in racial tolerance than more direct questions which might elicit "correct" responses. Since the sample was very small, the differences are not statistically significant, and the control group was not tested for this variable, the findings are only suggestive at best. Yet the pattern of findings across the many variables derived from this test is so striking that they are worth reporting.

It was implied above that the use of physical description is an indicator of social distance--a way of saying nothing about a person or avoiding issues. The use of physical description usually declines upon acquaintance.* In this case, the percentage of physical description statements was much higher across race than within race at Time 1 and declined greatly during the summer. The mean percentages of physical description follow:

*See Stafford (1958).

TABLE 42

MEAN PERCENTAGES OF PHYSICAL STATEMENTS IN CHILDREN'S DESCRIPTIONS OF PERSON IN FRONT OF THEM

Description Situation	Time 1	Time 2
Same sex and race	4.8	4.5
Same race, cross sex	.7	1.1
Same sex, cross race	6.5	2.7
Cross race and sex	16.6	10.0

In contrast, the percentage of statements categorized as personality attributes was lower at Time 1 for the description of different races, and rose greatly during the summer.

TABLE 43

MEAN PERCENTAGES OF PERSONALITY STATEMENTS IN CHILDREN'S DESCRIPTIONS OF PERSON IN FRONT OF THEM

Description Situation	Time 1	Time 2
Same race and sex	12.2	14.1
Same race, cross sex	13.0	12.3
Same sex, cross race	7.3	19.2
Cross race and sex	2.6	22.0

Similarly, the percentage of statements describing the person as a self (his likes, dislikes, ambitions, etc.) was lower at Time 1 and increased over the summer.

TABLE 44

MEAN PERCENTAGES OF SELF STATEMENTS IN CHILDREN'S DESCRIPTIONS OF PERSON IN FRONT OF THEM

Description Situation	Time 1	Time 2
Same race and sex	5.7	5.1
Same race, cross sex	8.2	6.5
Same sex, cross race	5.8	8.3
Cross race and sex	2.6	8.0

The findings for the use of positive and negative statements show no definite pattern.

Those findings suggest that the EEP program may have been decreasing the social distance between the races. They must, however, be received with extreme caution. Since no findings are available for the control group, one cannot tell whether what was taught in the program had any effect on the children or whether the effect was simply a result of being together for six weeks. In addition, the children were not all describing the same person at both time periods. With such a small sample, this could make a difference in the results.

THE VERBAL SPEED THINKING TEST

The elementary-school children at Shady Hill were also given a series of sentences to complete, such as "I wish my father were...." and "Teachers are...." These sentences were designed to elicit attitudes toward school, others, and the self. It was hoped that the answers to these questions would reveal whether the EEP program had any effect on those general attitudes. Unfortunately, time did not permit the administration of these same sentences to the control group at Cooper Community Center. Without a control group for comparison, any changes found in the attitudes of the Shady Hill children can only be suggestive.

From the completed sentences, several variables were abstracted. These are as follows:

1. POSITIVE ATTITUDES TOWARD TEACHERS.* There were no significant changes in the attitudes of the children toward their teachers. As can be seen from Chart W, as many children taking this test had less positive attitudes toward teachers at the end of the summer as had more positive attitudes. There were also no significant differences among these children compared according to race or sex.

2. ATTITUDE TOWARD SELF AND OTHERS. No significant changes in attitudes toward the self or others were found. The children made slightly more negative than positive statements about themselves and about other people at both time points. There were no differences among these children when compared according to race or sex.

---

*The maximum score was 6 but a constant of 10 was added to make the scale positive.

3. MONEY AND OCCUPATIONAL SUCCESS CONCERN.* These variables were taken mainly from the answers to the sentences about wishes and what the child wanted to be in the future. All race and sex groups were slightly more interested in money at the end of the summer, but the change is not statistically significant. At the same time, all of the children were less concerned with occupational success at the end of the summer (see Chart X). Although the change could have occurred by chance, it offers an interesting contrast to the changes in interpersonal concern discussed below.

4. INTERPERSONAL CONCERN. The children at Shady Hill became significantly more concerned with interpersonal relations during the summer. (The mean rose from .953 to 1.769, T significant at .001 level.)** For example, in their three wishes at the end of the summer, the children chose friends rather than a list of possessions, and indicated that if they could start all over again, they would be more friendly.

Each of the race and sex groups was more concerned with interpersonal relations at the end of the summer, with the exception of the white boys (see Chart Y). At the same time, the white boys' concern with money increased more than the other groups, while their concern with occupational success decreased less than the other groups. None of the differences between the white boys and the other groups was large, but the pattern is suggestive. Perhaps the EEP was seen by this group as a means to upward social mobility more than to fun or new friends.

5. INTELLECTUAL AND PLAY CONCERN. These two variables were taken primarily from the answers to the sentences that asked the children to say what they liked best to do, what they did in their spare time, and what made them happiest. At the end of the summer, the children spoke more of intellectual pursuits than playing. A contrast of the means of the two variables follows:**

---

*The maximum score was 5 but a constant of 5 was added to make the scale positive.

**On this test each sentence completion that could be characterized as concerned with interpersonal relations was counted. The maximum score possible equaled 6 since only 6 sentences were relevant to this category.

TABLE 45

MEAN SCORES ON PLAY AND INTELLECTUAL CONCERN

	Time 1	Time 2
Play Concern	1.741	1.615
Intellectual Concern	1.815	2.119

The children were slightly more concerned with intellectual matters than play at the beginning of the summer, but not significantly so. At the end of the summer, however, the difference reached almost statistical significance. For the white boys, the change is statistically significant (see Chart Z). They were almost the lowest group at the beginning of the summer and the highest at the end.

TABLE 46

INTELLECTUAL CONCERN SCORE ON VERBAL SPEED TEST

	Time 1	Time 2
White Girls	2.2	1.9
Negro Girls	1.0	1.3
White Boys	1.2	2.7
Negro Boys	2.5	2.6

T for white boys significant at .05 level.

At the same time, the white boys were significantly lower at the end of the summer in their concern with playing.

Although these findings are only tentative, they do suggest that the EEP made the children, especially the white boys, more aware of intellectual pursuits.

CONCLUSIONS: INTERPERSONAL PERCEPTION AND VERBAL SPEED THINKING TESTS

Results of several of the variables in these two tests suggest that the boys and girls were affected differently by the program. All of the children were learning middle class attitudes and values; but when different types of middle class values are separated, it seems that the boys absorbed primarily the values of occupational success and monetary importance, while the girls learned manners and interpersonal concern. (One variable derived from the verbal speed test, a concern with manners,

was used only by the girls.)

In addition to middle class values and attitudes, the children seemed to develop awareness and appreciation of intellectual matters during the summer. The interpersonal perception and verbal speed tests show essentially the same findings.

Finally, the EEP children, at the end of the summer, seem to have been concerned with interpersonal relations and, more importantly, to have seen another person as an entity in his own right. This ability to relate to another person in a mature way seems to have been most pronounced in the case of cross-race acquaintance. The findings from the descriptions of the "person in front" strongly suggest a lessening of social distance and more mature approach to other races.

TAT TEST

Each child in the study was shown some pictures of everyday situations and asked to tell a story about them. The children at Shady Hill and Park Schools told their stories to the experimenter; the children at Belmont Hill and Milton wrote their stories. The pictures to which the stories were told follow:

I. a boy looking at a violin

II. a teacher explaining something to a class

III. a man and a boy talking

IV. a Negro and white boy sitting on a park bench

V. a boy sitting in front of a fire with an open book in front of him.

The Belmont and Milton children wrote stories for all five pictures; the Shady Hill children told stories about the last four; and the Park School children told stories about pictures II, III, and IV.

An almost infinite number of variables could be derived from the TAT stories, which were coded for activities, concerns, and traits and values of and outcome to each character. For this report, twenty-one variables, which measure concepts central to the goals of the program, were derived.

1. Racial tolerance (from picture IV).

2. Student-teacher relationships (picture II).

3. Traits of the teacher, negative and positive (picture II).

4. Traits of the child, negative and positive (picture II).

5. Child's school behavior, negative and positive (picture II).

6. Teacher's behavior, helpful or punishing (picture II).

7. Concern with crime and punishment in school (picture II).

8. Concern with obtaining possessions (all pictures).

9. General concern with crime (all pictures).

10. Interpersonal concern (all pictures).

11. Middle class concern (all pictures).

12. Play concern (mainly picture I).

13. Intellectual concern (mainly picture V).

14. Literary quality of story (all pictures).

15. Positive traits used for children (all pictures).

16. Negative traits used for children (all pictures).

17. Positive traits used for others (all pictures).

18. Negative traits used for others (all pictures).

19. Positive evaluation of children (all pictures).

20. Positive evaluation of others (all pictures).

21. The outcome as gratification of character's concern (all pictures).

Limitations on the scope of the pilot study made it impossible to graph all of these variables. Each age group in the program, however, can be compared with its appropriate control group to see what changes occurred in the means of the two groups during the summer. The following sections discuss some of the more interesting results found in a few of the variables from the TAT stories.

1. RACIAL TOLERANCE. The racial tolerance score was based on the children's perception of the relationship between the Negro and white boys in picture IV. (Maximum possible score = 10).

TABLE 47

MEAN RACIAL TOLERANCE SCORE BY AGE GROUPS

	Belmont-Milton	Older Cooper	Shady Hill	Middle Cooper	Park School	Young Cooper
Time 1	2.909	5.250	6.167	5.000	5.000	5.417
Time 2	4.217	5.800	5.750	7.000	7.222	6.143

There was some increase in the tolerance score during the summer, but the differences between scores for Time 1 and Time 2 are not significant. In addition, the scores for the control group increased almost as much as did those for the EEP group, so that nothing can be said about the effects of the EEP program on racial tolerance from this data.

It is interesting, however, that at the beginning of the summer the older children in the program were significantly less tolerant than the younger children. (The difference in the Belmont-Milton and Shady Hill-Park means is significant at the .05 level.) The Belmont-Milton sample, however, was not significantly less tolerant at Time 1 than the teenagers from Cooper Community Center. This finding is consistent with the findings from the literature on racial tolerance which show that racial tolerance is negatively correlated with age among children. It would be expected that the teenagers would be less tolerant.

Unfortunately, except for the difference between the Belmont-Milton children and the younger EEP children on the racial tolerance scale, neither the changes in single groups nor the differences between groups reach statistical significance on the other twenty variables included in this analysis. Nevertheless, some of the trends in the other variables are interesting and corroborate evidence from the other tests dealing with the same concepts. Therefore, the rest of the report will present those findings which, of course, must be interpreted with extreme caution.

2. CONCERN WITH CRIME AND PUNISHMENT IN THE SCHOOL SITUATION. Another hypothesis was that the children who were exposed to a new type of school situation in the program would less often see schools as places of discipline at the end of the summer than they did when they entered the program. To construct this variable, the TAT stories were categorized by the concern or focus of the characters in the story. Table 48 shows the percentage of concerns which were categorized as "crime and punishment" for each group in the study. For example, a story in which a boy threw an eraser at another and was disciplined by the teacher would be categorized as concerned with "crime and punishment." On the other hand, a story in which someone asked a question or the teacher explained something would

not be categorized as "crime and punishment."

TABLE 48

PERCENT OF CRIME-IN-SCHOOL CONCERNS BY AGE GROUPS

	Belmont-Milton	Older Cooper	Shady Hill	Middle Cooper	Park School	Young Cooper
Time 1	.262	.000	.273	.200	0	0
Time 2	.131	.250	.056	.333	0	.500

The changes in percentage of crime concern substantiate the hypothesis.

Each of the Cooper groups became more concerned with crime during the summer while each of the EEP groups became less concerned with crime and punishment. The stories the EEP children told about the school-situation picture more often depicted a classroom discussion than a discipline situation.

3. CONCERN WITH POSSESSIONS. Another interesting category of concerns in the TAT stories has to do with the receiving or losing of possessions. For example, a story in which the main character wondered what his uncle would bring him for his birthday was categorized as being concerned with possessions. This concern accounted for less than ten per cent of the categories in the children's stories, but the differences in the various groups of children and the parallels with data from other tests make the findings worth repeating.

During the summer, the EEP children became less concerned with possessions while each of the control groups became more concerned. This finding suggests that the children's stories seem to have assumed a dichotomy between possessions and knowledge broadly conceived. The children seem to have been concerned with either getting information or acquiring possessions. These data indicate that, during the course of the summer, the EEP children became less interested in the latter and generally more interested in the former. (Maximum possible score = 1.00.)

TABLE 49

PERCENT OF POSSESSION CONCERN BY AGE GROUPS

	Belmont-Milton	Older Cooper	Shady Hill	Middle Cooper	Park School	Young Cooper
Time 1	.045	.029	.065	.049	.039	.024
Time 2	.039	.033	.028	.059	.024	.066

4. GENERAL CONCERN WITH CRIME. This finding matches the finding above concerning crime in the school situation. Table 50 gives the percent of crime concerns present in all the stories.

TABLE 50

PERCENT OF CRIME CONCERN BY AGE GROUP

	Belmont-Milton	Older Cooper	Shady Hill	Middle Cooper	Park School	Young Cooper
Time 1	.134	.066	.139	.131	.021	.040
Time 2	.140	.217	.113	.126	.014	.101

5. POSITIVE SELF TRAITS. A general hypothesis of this study was that the self-image of the children in the program would improve during the summer. The other tests show some evidence of the improvement of self-image, but it is not reported in detail because the changes are not significant. TAT responses supply further evidence, even though slight, that the program contributed to some improvement in self-image. The main character in the children's TAT stories was assumed to represent the self.* The percentage of characters about which the child made any laudatory remarks became his score on positive self-image. Table 51 shows the mean self-image score for the various groups of children in the study.

---

*In stories in which adults and children are present, the main character is always the child.

TABLE 51

MEAN POSITIVE SELF SCORE BY AGE GROUP

	Belmont-Milton	Older Cooper	Shady Hill	Middle Cooper	Park School	Young Cooper
Time 1	.061	.167	.000	.300	.000	.409
Time 2	.122	.033	.056	.000	.000	.500

6. OTHER VARIABLES. The children in the program changed on some of the other variables derived from the TAT tests, but the control group changed nearly as much and in the same direction. Such findings cannot therefore be reported as suggestive of effects of the EEP experience; they are more likely to be effects of retesting the children with the same pictures.

COMPARISON OF NUMBERS OF CHILDREN WHO CHANGED. The Cooper children and the EEP children were compared on the variables derived from the TAT stories to see whether there were significant differences in the number of children who changed in different directions during the summer. This analysis was done to find any differences that were not evident when the means of the two groups were compared. Two variables, concern with possessions and intellectual concern, showed significant differences using this comparison.* The contingency tables are reproduced below. As can be seen from Table 52, a much higher percentage of EEP children were below the mean on both time points on concern with possessions. This finding would suggest that the EEP children are becoming less concerned with possessions and perhaps more concerned with learning. This table, however, must be interpreted with extreme caution since so few of the children's stories contained references to possessions. The number of children included in this table is too small to warrant any generalizations about the effects of the EEP program.

It is also difficult to be too confident of the increased interest in learning of the EEP children, since as a group they were not significantly different from the Cooper children on the measure of intellectual concern from the TAT stories. The older EEP children, however, were more concerned with intellectual matters than the older Cooper children. Yet the middle group from Cooper were more concerned with intellectual matters than the Shady Hill children, making the comparison of the total EEP and Cooper groups insignificant on this variable. Table 53 shows this clearly.

---

*These variables were scored in exactly the same way as those reported in the previous section.

TABLE 52

NUMBER AND PERCENT OF CHILDREN ABOVE AND BELOW THE MEAN ON CONCERN WITH POSSESSIONS

	EEP	Cooper
Above $\bar{x}$, Time 1	12.5%	
Above $\bar{x}$, Time 2	5	
Above $\bar{x}$, Time 1	15.0%	14.3%
Below $\bar{x}$, Time 2	6	1
Below $\bar{x}$, Time 1	2.5%	57.1%
Above $\bar{x}$, Time 2	1	2
Below $\bar{x}$, Time 1	70.0%	28.6%
Below $\bar{x}$, Time 2	28	2

$x^2 = 19.200$ Significant at .001 level.

TABLE 53

NUMBER AND PERCENT OF CHILDREN ABOVE AND BELOW THE MEAN ON INTELLECTUAL CONCERN, BY AGE GROUP

	Belmont	Milton	Older Cooper	Shady Hill	Middle Cooper	Park School	Young Cooper
Above $\bar{x}$, Time 1	21.4%	7.7%	16.7%	9.1%	28.6%	53.3%	38.5%
Above $\bar{x}$, Time 2	6	1	1	1	2	8	5
Above $\bar{x}$, Time 1	21.4%	38.5%		18.2%		6.7%	30.8%
Below $\bar{x}$, Time 2	6	5		2		1	4
Below $\bar{x}$, Time 1	10.7%	23.1%		27.3%	28.6%	20.0%	15.4%
Above $\bar{x}$, Time 2	3	3		3	2	3	2
Below $\bar{x}$, Time 1	46.4%	30.8%	83.3%	45.5%	42.9%	20.0%	15.4%
Below $\bar{x}$, Time 2	13	4	5	5	3	3	2

$x^2 = 26.131$ Not significant at .05 level.

In short, the suggestion that the EEP children became more interested in learning than the Cooper control group appears to be true for all but the Shady Hill children.

Table 54 shows that the EEP children were more concerned with play than the Cooper children. This finding represents an anomaly compared to evidence from other tests, which suggest that the EEP children were more interested in intellectual pursuits than the Cooper children.

TABLE 54

NUMBER AND PERCENT OF CHILDREN ABOVE AND BELOW THE MEAN ON CONCERN WITH PLAY

	EEP	Cooper
Above $\bar{x}$, Time 1	32.8%	7.7%
Above $\bar{x}$, Time 2	22	2
Above $\bar{x}$, Time 1	19.4%	15.4%
Below $\bar{x}$, Time 2	13	4
Below $\bar{x}$, Time 1	16.4%	23.1%
Above $\bar{x}$, Time 2	11	6
Below $\bar{x}$, Time 1	31.3%	53.8%
Below $\bar{x}$, Time 2	21	14

$x^2 = 7.729$ Significant at .05 level.

It is clear from the table that at both time points, fewer EEP than Cooper children were below the mean and more EEP than Cooper children were above the mean. The number of changers, however, was not significantly different for the two groups. In fact, more EEP children became less concerned with play and fewer became more concerned with play during the summer. Thus, the differences between the EEP and Cooper groups are mainly the result of initial variation.

The anomaly with previous findings about concern with intellectual matters is probably due to the presence of the Park School children who were not part of the earlier analysis of the Interpersonal Perception Test. In fact, the Park School children had a much higher mean on this variable than the children in the other schools, which is understandable in view of their age. One would hardly expect six-year-olds to be concerned with anything but play and fun.

Generally, the TAT findings confirm earlier results that indicate a trend toward more concern with intellectual matters on the part of the EEP children. This increase in intellectual interest is probably the result of the EEP summer experience since it was not present in the control group.

CONCLUSIONS. In general, the TAT Test findings are disappointing in the paucity of significant changes they reveal in the children participating in the program and in the differences between the EEP children and the control group. This is to be expected, however, because the TAT Test measures values and motives which the psychologists would say lie deep in the personality structure of the individual and which are not readily subject to change in such a short time. It is encouraging that the program gave them even a nudge in the hypothesized direction. The trends in TAT data, however, do confirm the changes noted in some of the same concepts measured by other tests and give us more confidence in those findings.

COMPARISON OF CHANGES ON ALL TESTS BY EEP SCHOOL ATTENDED

No significant differences in the amount or direction of change among the EEP children in the various schools were revealed in this study. Some interesting initial differences in the children from various schools were identified, however, and may reflect the kinds of children recruited to the separate programs. Some of these initial differences persisted so that the various schools were different at the end of the summer also, although no significant changes had taken place. The following variables show these differences among the individual schools.

1. POSITIVE EVALUATION OF TEACHERS. The children's initial descriptions of teachers on the Interpersonal Perception Test were significantly more positive in Milton and significantly more negative in Belmont 8A than in the other schools (T significant at .05 level). It would seem that the children in these two schools had different relationships with teachers in the winter. Although Belmont 9A and Milton children became less positive in their evaluations of teachers during the summer, the differences among the schools were still significant at the end of the summer.

TABLE 55

MEAN PERCENTAGES OF POSITIVE STATEMENTS IN CHILDREN'S DESCRIPTIONS OF TEACHERS

	Shady Hill	Milton	Belmont 9A	Belmont 8A
Time 1	32.308	64.455	33.812	17.000
Time 2	38.269	50.333	20.067	24.933
Mean Change	2.292	-10.545	-4.083	6.357

2. SELF-CONCERN. There were interesting and significant differences in the initial level of self-concern between the three older groups of EEP

children and the Shady Hill children (as revealed in the degree to which the children described others in terms of themselves on the Interpersonal Perception Test). Since the amount of self-concern varies inversely with age,* the Shady Hill children were remarkable in their relative lack of self-concern as compared with the older children in the program. Either the Shady Hill children were particularly mature in this respect or the Belmont and Milton groups were exceptionally immature. It is impossible to make a decision between these alternatives with this data, but the reversal of the usual trend is interesting to speculate upon.

TABLE 56

MEAN PERCENTAGES OF SELF-CONCERN STATEMENTS IN CHILDREN'S DESCRIPTIONS

	Shady Hill	Milton	Belmont 9A	Belmont 8A
Time 1	7.593	29.667	14.588	13.800
Time 2	9.308	22.400	15.533	8.200
Mean Change	1.040	-6.545	-.143	-6.786

T for Shady Hill compared to other schools significant at .05 level.

3. INTELLECTUAL CONCERN. The schools differed in their interest in intellectual pursuits as measured by the content of the children's descriptions of other people.

TABLE 57

MEAN PERCENTAGES OF INTELLECTUAL CONCERN STATEMENTS IN CHILDREN'S DESCRIPTIONS

	Shady Hill	Milton	Belmont 9A	Belmont 8A
Time 1	10.852	7.250	14.000	12.857
Time 2	17.259	5.333	8.824	15.333
Mean Change	6.407	-1.917	-4.176	2.467

T for Milton compared to other schools significant at .05 level.

The children in the Milton program made considerably fewer statements concerned with intellectual pursuits at the beginning of the summer than the children in the other three schools. Their percentage dropped by the end of the summer, making the Milton children still the lowest group at that time. The Belmont 9A children also used fewer intellectual statements at the end of the summer than they had at the beginning of the

*Compare Vreeland (1960) with Stafford (1958).

program, but they had been the highest group at the start of the summer, so the drop is not so surprising.

4. BEST FRIEND AS SELF. The children in the four schools differed in the percentage of statements they used describing their best friend in terms of the friend's own attitudes and interests, another measure of maturity.

TABLE 58

MEAN PERCENTAGES OF SELF STATEMENTS IN CHILDREN'S DESCRIPTIONS OF BEST FRIEND

	Shady Hill	Milton	Belmont 9A	Belmont 8A
Time 1	14.296	9.364	12.000	21.933
Time 2	13.640	4.000	20.429	26.800
Mean Change	-.250	-4.009	10.077	6.643

The Milton children were significantly lower than the Belmont 8A group on this variable at the beginning of the summer. Since at the end of the summer they had dropped to an even lower score on this measure of maturity, they were significantly lower than all of the other groups at Time 2 (T significant at .05 level). Milton was also the highest school on the measure of self-concern, or the lowest group on that measure of maturity. These two findings suggest that the Milton children were the least mature group (in terms of their conception of interpersonal relations) at the beginning of the summer and became even less mature during the course of the program on at least the description of best friend as a self.

5. CRIME CONCERN (FROM THE TAT TEST). The major difference among the schools is the great number of Shady Hill children who were above the mean on concern with crime at the beginning of the program and who dropped to below the mean at the end of the summer.

TABLE 59

NUMBER AND PERCENT OF CHILDREN ABOVE AND BELOW THE MEAN ON CRIME CONCERN

	Belmont	Milton	Shady Hill	Park
Above $\bar{x}$, Time 1	17.9%	30.8%	9.1%	13.3%
Above $\bar{x}$, Time 2	5	4	1	2
Above $\bar{x}$, Time 1	10.7%	15.4%	54.5%	20.0%
Below $\bar{x}$, Time 2	3	2	6	3
Below $\bar{x}$, Time 1	14.3%	7.7%	27.3%	6.7%
Above $\bar{x}$, Time 2	4	1	3	1
Below $\bar{x}$, Time 1	57.1%	46.2%	9.1%	60.0%
Below $\bar{x}$, Time 2	16	6	1	9

$x^2 = 22.797$ Not significant at .05 level.

6. INTERPERSONAL CONCERN (FROM TAT TEST). The major difference among the schools on this variable is the low level of interpersonal concern exhibited by the Park School children. In fact, interpersonal concern increases as age increases so that, not surprisingly, the older children were highest on this variable. Nevertheless, the Shady Hill children made the greatest gains in interpersonal concern during the summer.

TABLE 60

NUMBER AND PERCENT OF CHILDREN ABOVE AND BELOW THE MEAN ON INTERPERSONAL CONCERN

	Belmont	Milton	Shady Hill	Park
Above $\bar{X}$, Time 1	39.3%	46.2%	18.2%	
Above $\bar{X}$, Time 2	11	6	2	
Above $\bar{X}$, Time 1	14.3%	7.7%	18.2%	13.3%
Below $\bar{X}$, Time 2	4	1	2	2
Below $\bar{X}$, Time 1	10.7%	15.4%	27.3%	
Above $\bar{X}$, Time 2	3	2	3	
Below $\bar{X}$, Time 1	35.7%	30.8%	36.4%	86.7%
Below $\bar{X}$, Time 2	10	4	4	13

$x^2 = 36.270$ Significant at .01 level.

These last two findings, however, are much more likely to represent age differences in the children than differences in the social structure or goals of the schools they attended this summer.

One cannot attribute to age, however, the significantly lower scores of the Milton children on the measures of maturity and intellectual concern. These findings suggest that there may have been some differences in the children who came to the Milton program and/or in the design of that program that made these children less susceptible to the increase in intellectual interest and interpersonal maturation that seemed to be characteristic of the other EEP children in general. Generally speaking, however, there are few significant differences that can be attributed to the effect of the EEP program. The findings suggest instead that the various EEP schools are recruiting different types of children.

COMPARISON OF THE BACKGROUNDS OF CHILDREN WHO WERE DIFFERENTLY AFFECTED BY THE PROGRAM

Several background characteristics of the EEP children and the descriptions of the children in the teachers' reports were compared with the

children's scores on the variables derived from the various tests given during the summer to see whether children who were particularly high or low on any of the variables or who changed greatly had any background characteristics in common or were described in any particular way by the teachers in the program. Correlations reported here are $>.300$.

It seems that the teachers did not distinguish between brilliant and cooperative children in their reports. Although these qualities were coded separately from the teachers' reports, all are highly correlated. Thus, either the teachers were equating brilliance and cooperation or almost all the brilliant children were cooperative, which seems less likely. The teachers in the upper grades also mentioned that a student was brilliant more often than the teachers in the lower grades. Perhaps it is easier to tell the relative aptitude of students in the higher grades.

These findings also offer some independent evidence of the accuracy of the teachers' judgments. The teachers' ratings of a child as academically good correlated with his writing a mature story on the TAT Test (full plot, use of quotations, clever twists, etc.). In addition, writing a mature story correlated with the age of the child, as would be expected.

There are no correlations high enough to be reported between the students' characteristics and the direction of change. That is, the "changers" had nothing special in common as far as we can determine from these background characteristics and teachers' reports.

There are, however, some interesting correlations between the characteristics of the children and their scores on several of the variables, which corroborate the findings from the cross tabular analysis reported earlier.

1. The Negroes had a more positive evaluation of themselves at the end of the summer than did the white children. They also did more changing toward positive self-conception. This finding would suggest that the program enhanced their self-esteem. At the same time, however, the Negroes had a higher general positive attitude at the beginning of the summer than at the end, indicating that their increase in self-esteem was not just part of an increasing use of positive statements for describing everyone.

2. A concern with crime in the TAT stories was more characteristic of the older children than the younger children at the beginning of the program, but the correlation was lower at the end of the summer.

Considering all the variables in this study, the evidence suggests

that neither information about background characteristics nor the teachers' evaluation of the EEP students provides a very good predictor of a child's score at the beginning of the summer or change in score during the summer on the tests given in this project. This study was not successful in determining which children will respond most to the program. It is possible, however, that a combination of background information and teacher evaluation will more successfully distinguish children who would be expected to respond differently to the program. These data are presented on page 51. More likely, however, children who respond differently to the program will have to be determined more clinically. This type of analysis will have to wait for future research.

RELATIONSHIPS AMONG TESTS MEASURING THE SAME CONCEPTS

It was also possible to see what relationships the variables from the study had to each other. They were not as highly correlated as was hoped, but isolated variables did show relationships which one would have predicted theoretically, strengthening faith in the common sense of studying variables many steps removed from the actual tests given to the children. For example:

1. It has been suggested that the use of neutral statements in the descriptions can be thought of as a measure of maturity, while the use of what has been called statements of "self-concern" in the descriptions can be considered a measure of immaturity. This decision was made on theoretical grounds and on the results of past studies using the Interpersonal Perception Test. Findings from the current analysis indirectly confirm these measures. They are negatively correlated in this study suggesting that they are, indeed, measuring opposite ends of a continuum as was hypothesized.

2. A concern with crime in the TAT stories is negatively related to a positive evaluation of teachers in the Verbal Speed Thinking Test, suggesting a dichotomy in the children's minds between liking teachers or things intellectual and playing. The children had not yet conceived of school as a place to enjoy. The negative correlation between fun and school did diminish during the summer, suggesting that the program may have been breaking down the dichotomy.

ANALYSIS OF VARIABLES ON WHICH THE CHILDREN SHOWED MOST CHANGE

It was also necessary to know, in evaluating EEP, on which variables the children showed the greatest amount of change. Table 61 presents excerpts from a correlation matrix of all the variables at both time points. The higher the score beside the variable, the more correlation exists between the children's scores at the beginning and end of the summer. Therefore,

the lower the score the more the EEP children changed on that variable. The maximum score equals 1.000.

For the variables which are correlated less than .400 (indicating substantial change during the summer) the direction of the change is indicated.

Table 61 shows substantial change in the scores of individual children on some of the variables in the study (although the group means may not have changed significantly). In particular, the children's various evaluations of teacher and self changed considerably, although not always in a positive direction; and interpersonal and intellectual concern changed during the summer, both in a positive direction which was reported earlier. This table also indicates the fruitlessness of the morality and cooperation tests which measured almost no change during the summer.

DETERMINATION OF GROUPS OF CHILDREN DIFFERENTIALLY AFFECTED BY THE PROGRAM

A factor analysis of the variables in the EEP study can tell one something about the types of children in the program who have different attitudes and values and responses to the program. The present factor analysis uncovered five general types.

1. The older Negro boys differed from the younger ones by having a very positive attitude toward teachers (although this positive attitude declined during the course of the summer), combined with a change from negative to positive attitude toward themselves during the summer. In fact, they were very negative in their descriptions of best friends and classmates at the beginning of the program and very positive at the end of the summer. They were very concerned with middle class ideals at the beginning, less so at the end, and were very concerned with themselves (suggesting immaturity) at both times. They were also very concerned with interpersonal relations at Time 1 and became even more concerned with such relations during the summer. Although the factor loading is not as strong, they were generally boys with neither a particularly high I.Q. nor a high grade average.

2. The second group had almost the same characteristics as the first one, except that it consists mainly of girls of all ages, I.Q.'s, and grade averages. They had a much more positive attitude toward teachers at the end of the summer than at the beginning (opposite direction of change from the boys). Their positive attitude toward teachers also appeared in the Verbal Speed Thinking Test and the TAT pictures, while the boys' positive attitude was confined to their descriptions of teachers.

TABLE 61

RELATIONSHIP BETWEEN VARIABLES AT THE TWO TIME POINTS

Variable	Before-After Correlation	
A. From the descriptions in the Interpersonal Perception Test		
1. Positive evaluation of teachers	.273	+
2. Positive evaluation of self	.290	-
3. Positive attitudes toward others	.498	
4. Negative evaluation of teacher	.072	+
5. Negative evaluation of self	.027	-
6. Negative attitude toward others	.171	+
7. Neutral attitude toward others	.587	
8. Neutral attitude toward teachers	.259	+
9. Neutral attitude toward self	.277	+
10. Middle class concern	.227	+
11. Self concern	.492	
12. Fun concern	.332	+
13. Intellectual concern	.232	+
14. Teacher as demanding	.368	-
15. Physical description	.657	
16. Best friend as self	.356	+
B. From the "What Should He Do?" Test		
1. Getzels Morality Scale	.514	
2. Cooperation Scale	.479	
3. Kluckhohn Middle Class Scale	.229	+
C. Verbal creativity from the Verbal Speed Thinking Test		
1. Intellectual concern	.131	+
2. Positive evaluation of teacher	.323	-
3. Money concern	.321	+
4. Occupational success concern	.539	
5. Positive self evaluation	-.217	+
6. Positive evaluation of others	.505	
7. Striving in school	.438	
8. Play concern	.121	-
9. Interpersonal concern	.130	+
D. From the TAT Test		
1. Racial tolerance	.444	
2. Good teacher	.348	-
3. Good child	.196	-
4. School crime concern	.380	-
5. Possessions concern	.427	
6. General crime concern	.539	
7. Interpersonal concern	.089	
8. Middle class concern	.371	+
9. Fun concern	.303	+
10. Mature story	.433	

3. The third group of children were the old-timers at EEP who were described by their teachers as participators. They came to the program with a positive conception of both teachers and themselves and changed during the course of the summer to a negative opinion of both teachers and themselves. As a matter of fact, they were very negative in all their descriptions at Time 2 This negative attitude toward teachers also showed up in the TAT stories and the Verbal Speed Thinking Test. This group apparently saw teachers as demanding because they were also high on that variable. They were also concerned with crime in their TAT stories.

4. The fourth group consisted mainly of the children who the teachers said did not participate in or profit from the program and to whom the teachers attributed the most negative qualities. This group of children reciprocated the negative evaluation given them by their teachers and switched from a positive to a negative conception of teachers during the summer. These children described others (except teachers) mostly in terms of physical characteristics and scored as very immature in the ability to see others in terms of the others' attitudes and desires. Amazingly enough, despite the general negative feelings between these children and the teachers, EEP had considerable effect on them. This group of children was very low on the Getzels Morality scale and the Cooperation scale at the beginning, but raised their scores on both tests considerably during the summer.

5. The final group consists of those children whose parents were together and not on welfare, whom the teachers praised as able students (not necessarily participators), and who were considered to be interested and cooperative in the program. They generally had neutral attitudes toward others, but developed a conception of teachers as demanding during the summer. Although they were positive or neutral in describing teachers, they revealed teachers in their TAT stories as bad people. These children were also concerned with crime in their stories. When asked, however, what they wanted to do (in the Verbal Speed Thinking Test) they denied playing and affirmed intellectual pursuits. These children seemed to be overly pushed, overly socialized, and seething with rebellion.

The data from this pilot study suggest that the EEP children changed as a result of the summer experience, but it is not clear, as a result of the analysis done to date, which children responded the most to the program. It is clear that neither age, school, race, sex, nor I.Q. distinguished them from other children. It is also clear that the teachers could not spot these "changers."

The factor analysis indicates that there are several groups of children who changed differently on the various tests, making a determination of the types of children who changed very difficult. Since the tests are relatively uncorrelated, we cannot really speak of "changers" but only of those who changed with regard to one or a syndrome of variables. Further analysis will have to probe into the background and behavior of each child who changed to answer this difficult question.

SUMMARY OF CONCLUSIONS

Despite the briefness of the summer session, the EEP program appears to have had some effects upon the children who participated in it which were not evident in the control group of children from the Cooper Community Center. These effects are:

1. Increased awareness of and interest in intellectual matters and a more positive attitude toward school.

   (a) During the course of the summer, the EEP children became more interested in the intellectual ability of their friends;

   (b) At the end of the summer, the EEP children's stories about school situations were much more oriented to descriptions of discussions and knowledge than of discipline and punishment. In fact, their general concern with crime diminished during the summer;

   (c) The EEP children showed less concern for possessions at the end of the summer. They wanted more from life than material goods. Their sentence completions about leisure time more often concerned reading and going to the library.

2. Greater awareness of and concern with middle class values.

   At the end of the summer, EEP children cared more about such things as neatness, cleanliness, punctuality, and honesty.

3. Tolerance of others and willingness to cooperate.

   (a) They were better able to describe a best friend as a person in his own right at the end of the session;

   (b) In sentence completions they wrote at the second testing, they were more concerned with interpersonal relations;

   (c) At the beginning of the summer, when describing a person of another race, the children used many peripheral descriptive categories, indicating social distance. The use of these categories dropped at the end of the summer; children tended to describe a person of another race more in terms of that person's own personality, likes, and dislikes. This dramatic shift in the type of categories used did not occur in the children's descriptions of people from their own race.

4. Creativity and imagination.

> Probably the most dramatic change observed was an increase in creative thinking on the Torrance Tests for most of the EEP children. The EEP children, who were more creative than the Cooper children even at the beginning of the summer, increased in creativity while the Cooper children did not become more creative. The gap between the two groups therefore widened.

No important differences in the effect of the EEP program could be observed among children of different races or in the different schools, except for a significant lessening of verbal creativity among the Park School children during the summer. There is evidence of significant initial differences in the children who attended the various EEP schools. Some of these differences can be attributed to age, but the differences in maturation between the Belmont and Milton junior-high-school children require further investigation of the recruitment programs of these schools.

Some data also suggest that boys and girls react differently to such a program, although the findings are not clear. For instance, the girls were already at the top of the scale in cooperation and universalism. While their position did not change, their responses, according to Jackson and Getzels' scale, became more "moralistic." In addition, the girls changed toward describing people (especially teachers) using more neutral statements, possibly indicating maturation during the summer which the boys did not share.

Examination of the background characteristics of the children who changed, as opposed to those of the children who did not, revealed no significant differences. A factor analysis of the children's background characteristics and their patterns of change during the summer indicated that there are distinguishable groups of children who react differently to the program, but neither a complete picture of their attitudes, nor the reasons for the differential effect of the program on them, is clear.

With regard to the instruments used, at least three findings are thus far clear. The various measures of changes in the same attitude and value domain did not correlate highly. For example, children whose scores on the TAT showed a high or positive feeling for teachers did not necessarily have scores showing the same kind of evaluation of teachers on the Interpersonal Perception Test. Second, the skewed distribution of scores on the various tests included in the "What Should He Do?" instrument and the high correlation between pretest and posttest scores indicate that this instrument is not sensitive enough to measure the

attitudes under study in this project. Third, the TAT is perhaps tapping values and traits that are more deeply ingrained in the personality and are not amenable to change in the short summer program. This characteristic of the TAT Test probably explains the relatively confusing and insignificant results associated with that test. It would perhaps be well to drop this instrument in future research of this kind. The presence, however, of any meaningful results that corroborate the findings from the more conscious tests lend confidence to the conclusions drawn from this study.

SUGGESTIONS FOR FUTURE RESEARCH

The dual purpose of this pilot project was to find hypotheses worth pursuing concerning the possibility of meaningful change occuring in children who take part in such short enrichment programs and to test several types of instruments designed to measure these changes with different types of tests on different levels of the personality. The first half of the purpose was met in that the study did find changes which warrant further examination. But before one can fully assess the achievements of enrichment programs such as this prototype, analysis of the data collected for this study must be completed and a larger study based upon this one must be conducted.

Two specific questions underlie examination of the instruments used. Which instruments work best with this kind of population and what are the relationships among the tests? That is, how do the different measures of the same concept correlate? It is clear from the pilot study that the multiple-choice test used should be drastically revised if it is to be used with this type of population. An encouraging result of the study is that on all the variables devised from the various instruments and purporting to measure the same concepts, the same direction of change was observed for the EEP children as a whole as for those in subgroups selected for comparison. Nevertheless, the actual correlations between variables derived from different instruments are sufficiently small to require further investigation.

Further research in this area is warranted and should be based upon the following recommendations:

1. Completion of the pilot project.

   (a) Scoring of the Drawing Completion Tests;

   (b) Investigation of the relation between the children's observed behavior and changes in their attitudes;

   (c) Study of the effect of teaching techniques and values espoused by teachers upon children in their classes;

   (d) Further comparison of the children who changed with those who remained unchanged and those who changed in a direction opposed to the goals of the program;

   (e) Re-analysis of the data from the Park School children to shed light on the anomalous findings regarding this group;

(f) Further examination of the Milton and Belmont programs to understand the initial differences in maturity among the children in these groups.

2. Repetition of the project on a larger scale with the following modifications.

(a) Revise or drop the multiple choice test and develop better tests of deferred gratification and universalism;

(b) Gather more extensive information about the backgrounds and personalities of the children to provide variables for explaining better the differences in various children's responses to the program;

(c) Obtain a more comparable control group;

(d) Improve the TAT pictures used to measure the two concepts mentioned in (a) above;

(e) Retest children subsequently to see whether the changes identified at the end of the summer persist even in the environment of their public schools.

REFERENCES

Bidwell, Charles E. Observation Schedule. Cambridge, Mass.: Harvard Student Study, Harvard University, unpublished, 1959.

Bidwell, Charles E., & Vreeland, Rebecca Stafford. TAT Scoring System. Cambridge, Mass.: Harvard Student Study, Harvard University, unpublished, 1966.

Garskof, Bertram, & Houston, John T. An Associative Interpretation of Verbal Relatedness. Cooperative Research Report, U.S. Office of Education, Contract #1073, 1962. Sarnoff A. Mednick & Martha Mednick, co-principal investigators.

Getzels, Jacob W., & Jackson, Philip W. Creativity and Intelligence. New York: John Wiley and Sons, 1962.

Hasdorf, Albert H., Richardson, Stephen A., & Dornbusch, Sanford M. The Problems of Relevance in the Study of Person Perception. In Renato Tagiuri & Luigi Petrullo (Eds.), Person Perception and Interpersonal Behavior. Stanford, Calif.: Stanford University Press, 1958.

Kluckhohn, Florence R. Dominant and Variant Value Orientations. In Clyde Kluckhohn, Henry A. Murray, & David M. Schneider (Eds.), Personality in Nature, Society, and Culture. New York: Alfred A. Knopf, 1953.

Mednick, Sarnoff A. The Associative Basis of the Creative Process. Ann Arbor: University of Michigan, mimeographed, 1961.

Mednick, Sarnoff A., & Houston, John T. Creativity and the Need for Novelty. Ann Arbor: University of Michigan, mimeographed, 1962.

Mischel, Walter. Delay of Gratification, Need for Achievement, and Acquiescence in Another Culture. Journal of Abnormal and Social Psychology, 1961, 62, 543-552.

Mischel, Walter. Preference for Delayed Reinforcement: An Experimental Study of a Cultural Observation. Journal of Abnormal and Social Psychology, 1958, 56, 57-61.

Mischel, Walter. Preference for Delayed Reinforcement and Social Responsibility. Journal of Abnormal and Social Psychology, 1961, 62, 1-7.

Murray, Henry A. Explorations in Personality. New York: Oxford University Press, 1938.

Stafford, Rebecca. Children's Categories of Interpersonal Perception. Cambridge, Mass.: Department of Social Relations, Harvard University, unpublished honors thesis, 1958.

Stouffer, Samuel A. Role Conflict and Sanctioning Reference Groups. In Samuel A. Stouffer, Social Research to Test Ideas. New York: Free Press of Glencoe, 1962.

Torrance, E. Paul. Guiding Creative Talent. Englewood Cliffs, N.J.: Prentice-Hall, 1962.

Vreeland, Rebecca Stafford. The Influence on an Institutional Subculture on Categories of Interpersonal Perception. Cambridge, Mass.: Department of Social Relations, Harvard University, unpublished interdisciplinary paper, 1960.

Winter, David G. Personality Effects of a Summer Advanced Studies Program. Cambridge, Mass.: Department of Social Relations, Harvard University, unpublished honors thesis, 1960.

KEY TO CHARTS:

Charts A-E
L-N

	White		Negro		
	Girl	Boy	Girl	Boy	
BELMONT 8th GRADE	■	■	◧	◧	EEP
BELMONT 9th GRADE	◆	◆	◆	◆	EEP
MILTON ACADEMY JR. HIGH	◒	◒	◐	◐	EEP
COOPER CHILDREN			▲	△	

Charts F-K

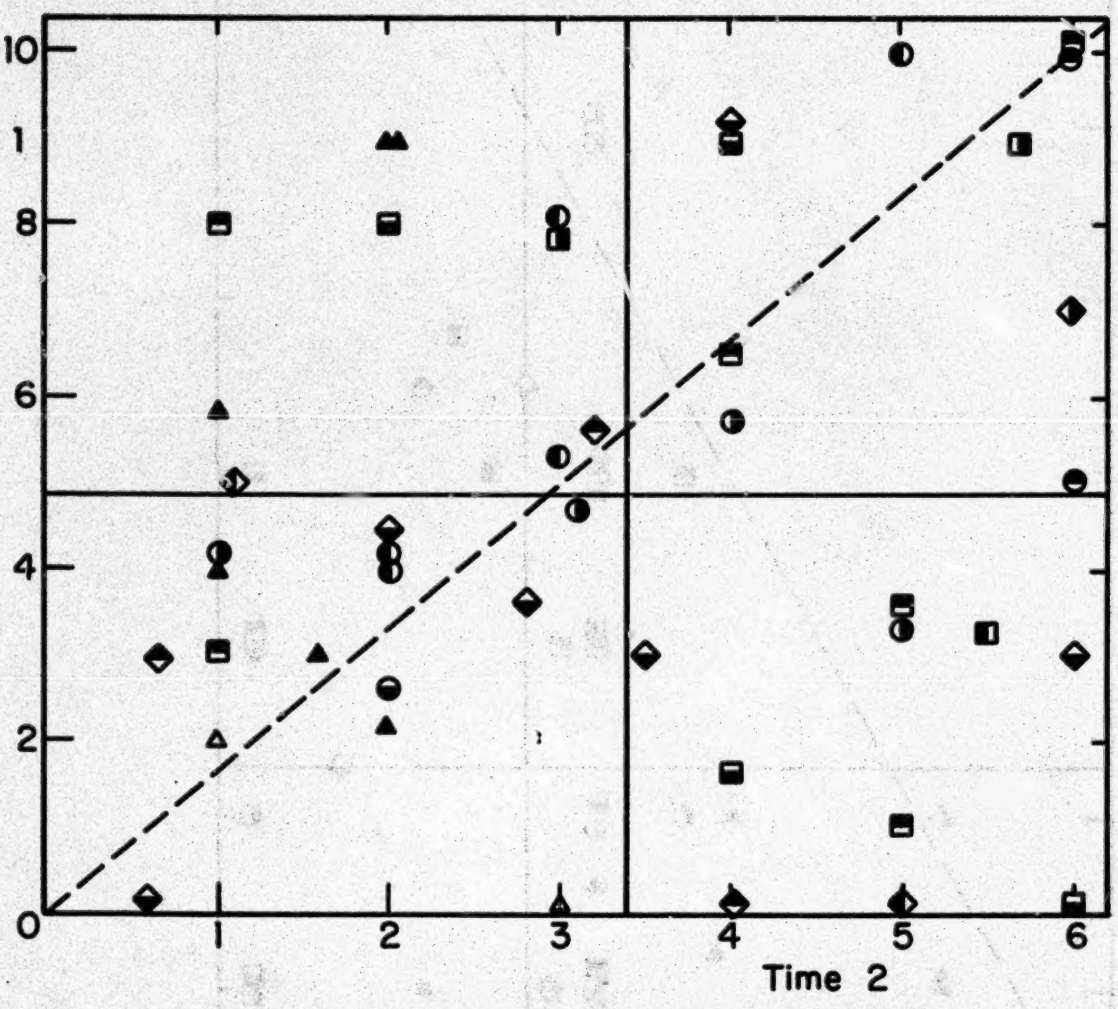
SHADY HILL	◒	◒	◐	◐	EEP
COOPER CHILDREN			▲	△	

Charts O-V

JUNIOR HIGH CLASSES	□	EEP
ELEMENTARY SCHOOL CHILDREN	○	EEP
COOPER CHILDREN	⚠	

Charts W-Z

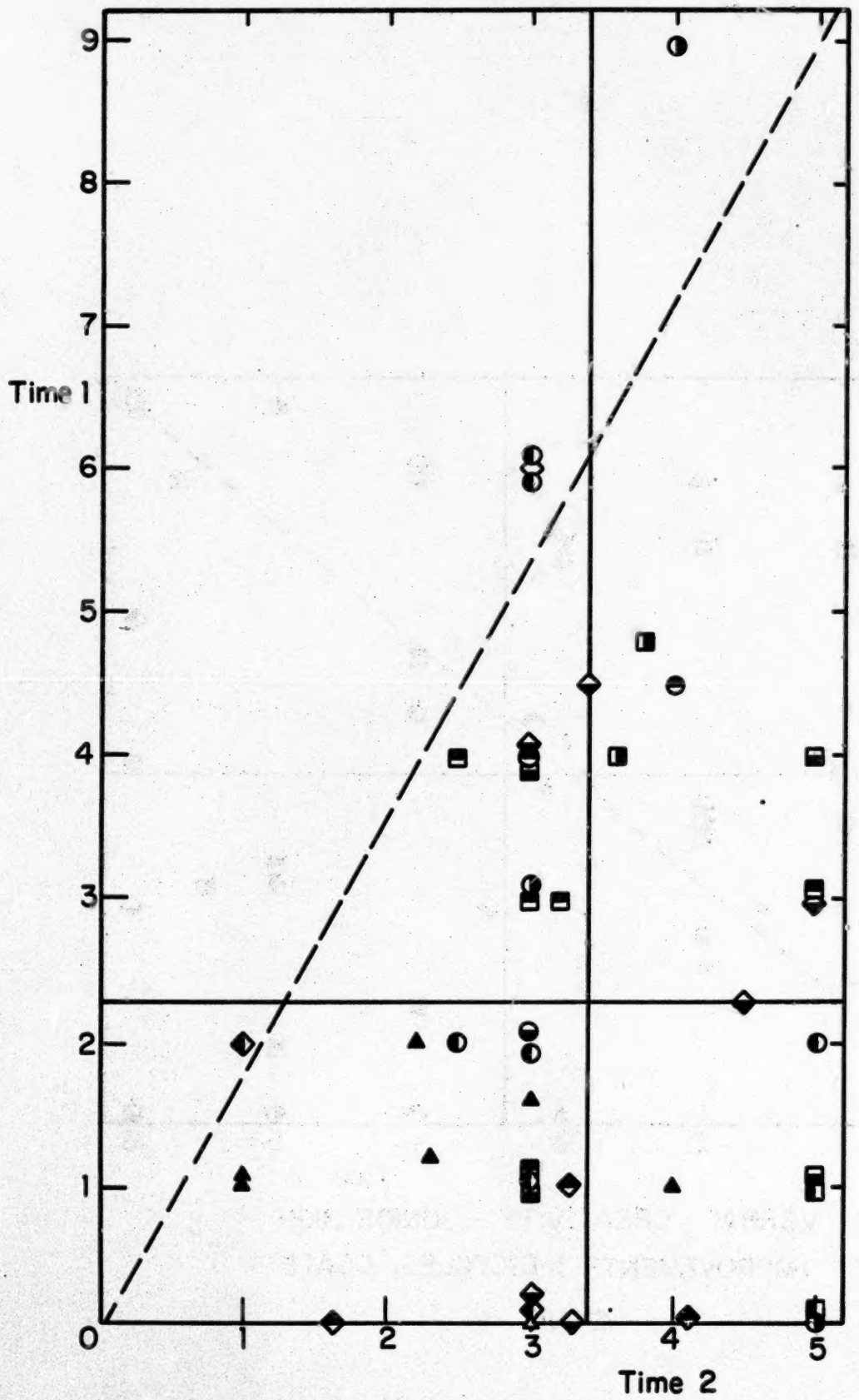
EEP CHILDREN x



VERBAL CREATIVITY - JUNIOR HIGH

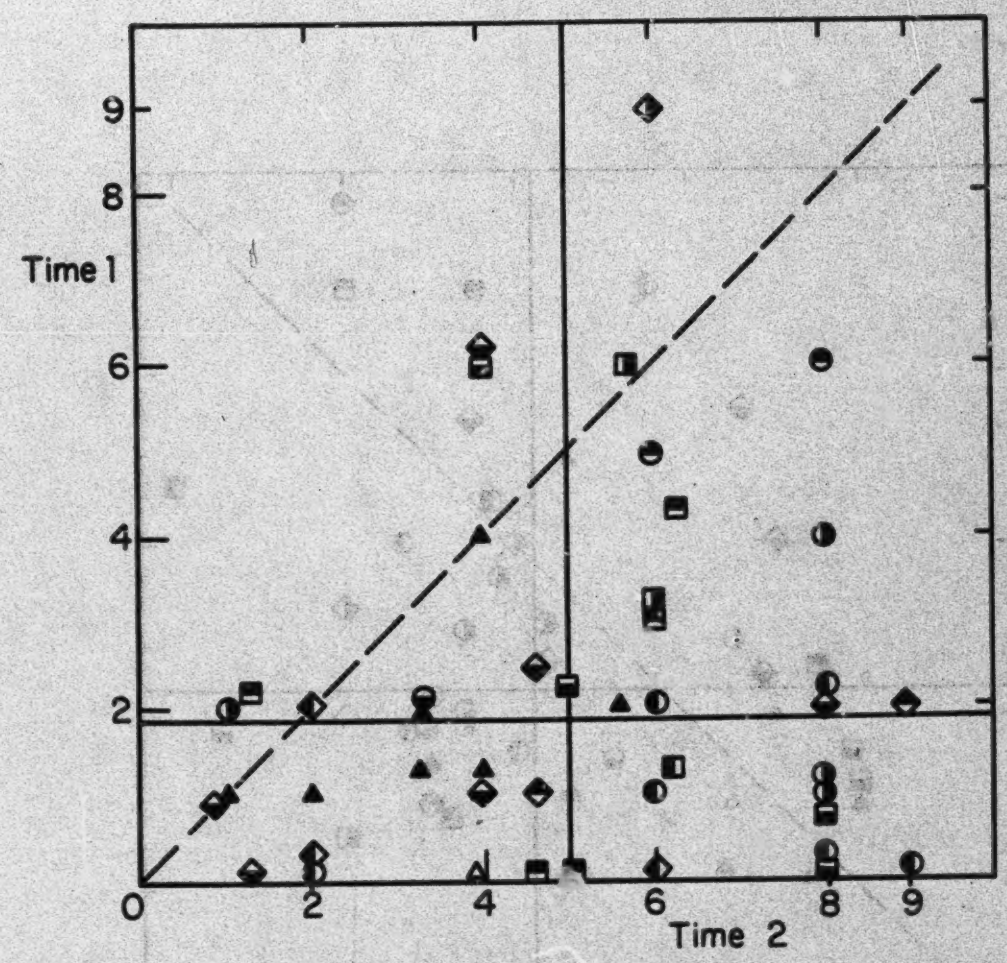
IMPROVEMENTS I: BICYCLES, COATS

CHART A



VERBAL CREATIVITY - JUNIOR HIGH
IMPROVEMENTS II: SHOES, TELEPHONE

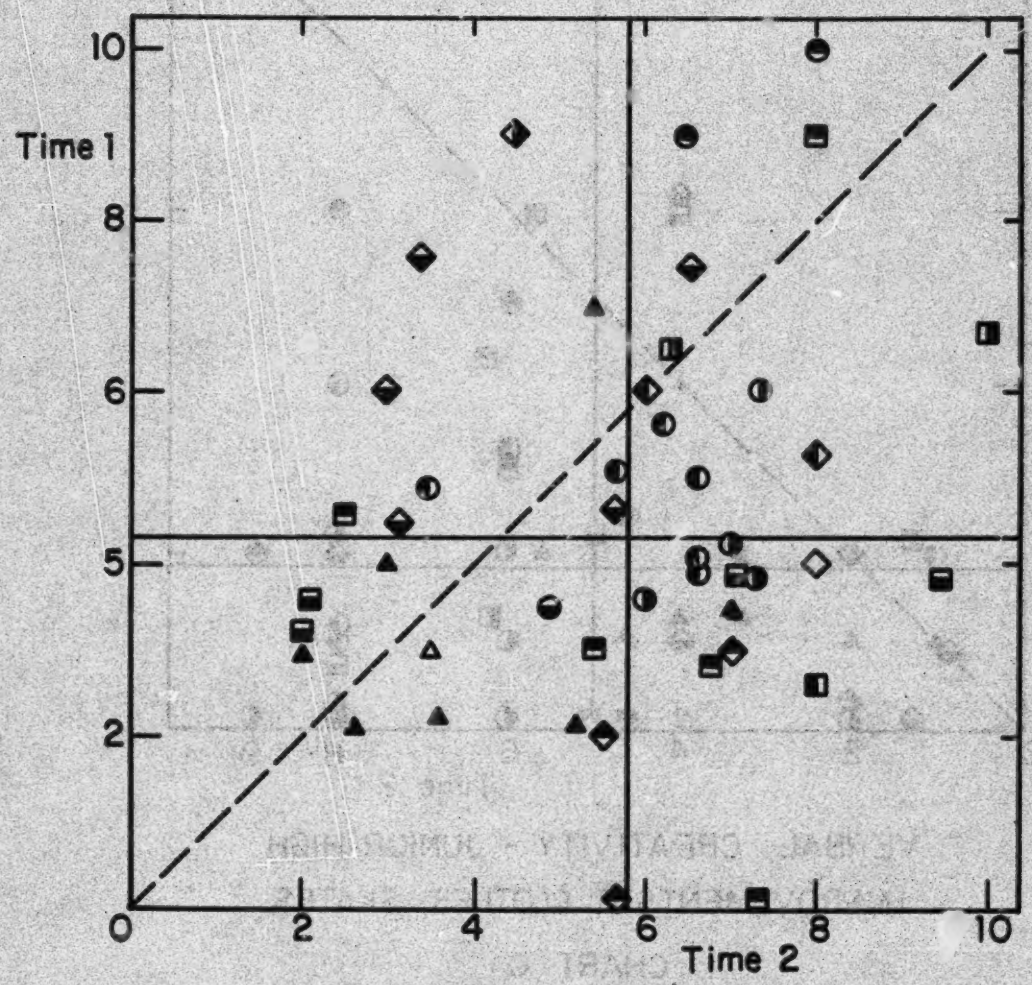
CHART B



VERBAL CREATIVITY - JUNIOR HIGH

IMPROVEMENTS III: CLOTHES, SKATES

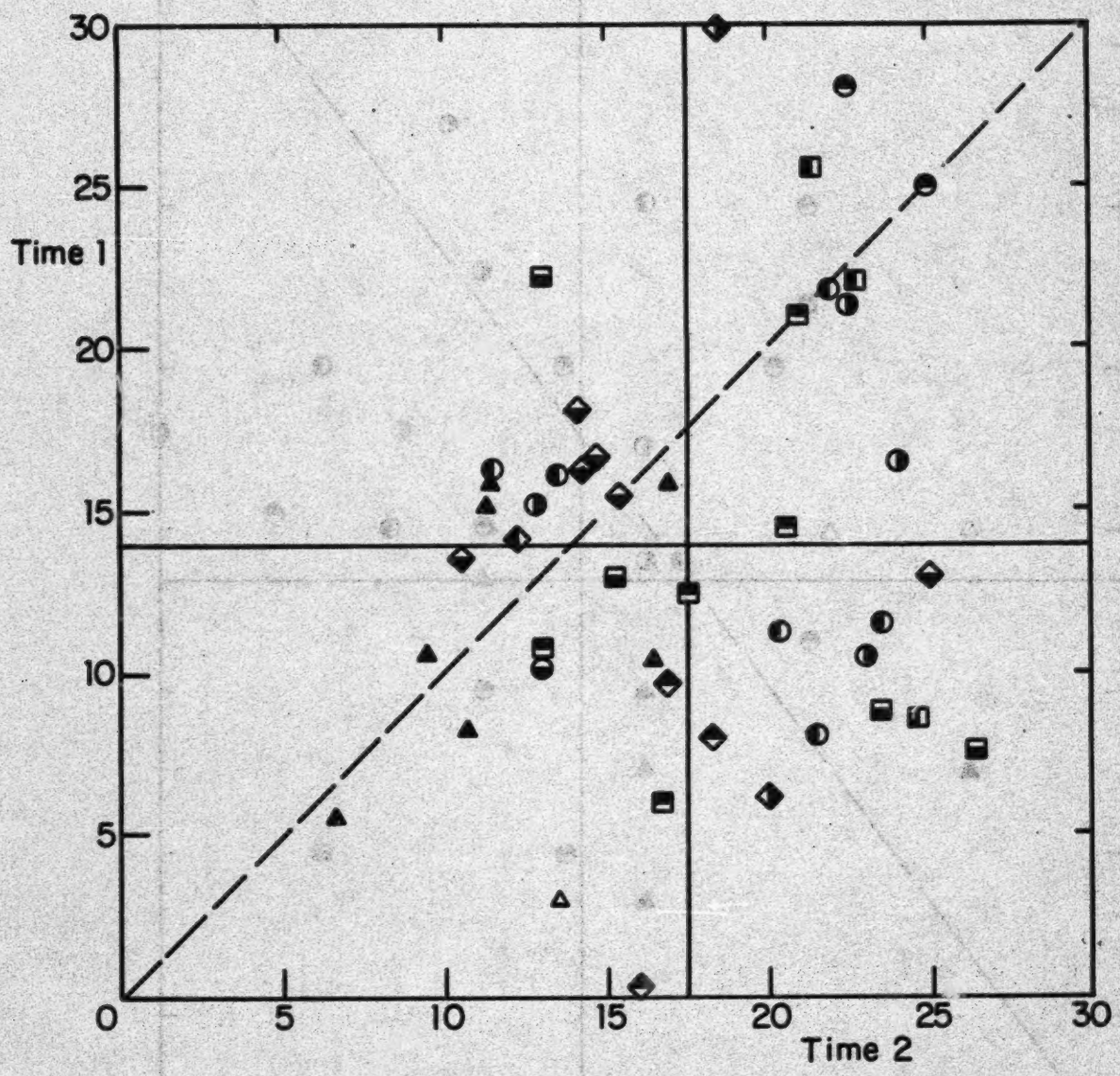
CHART C



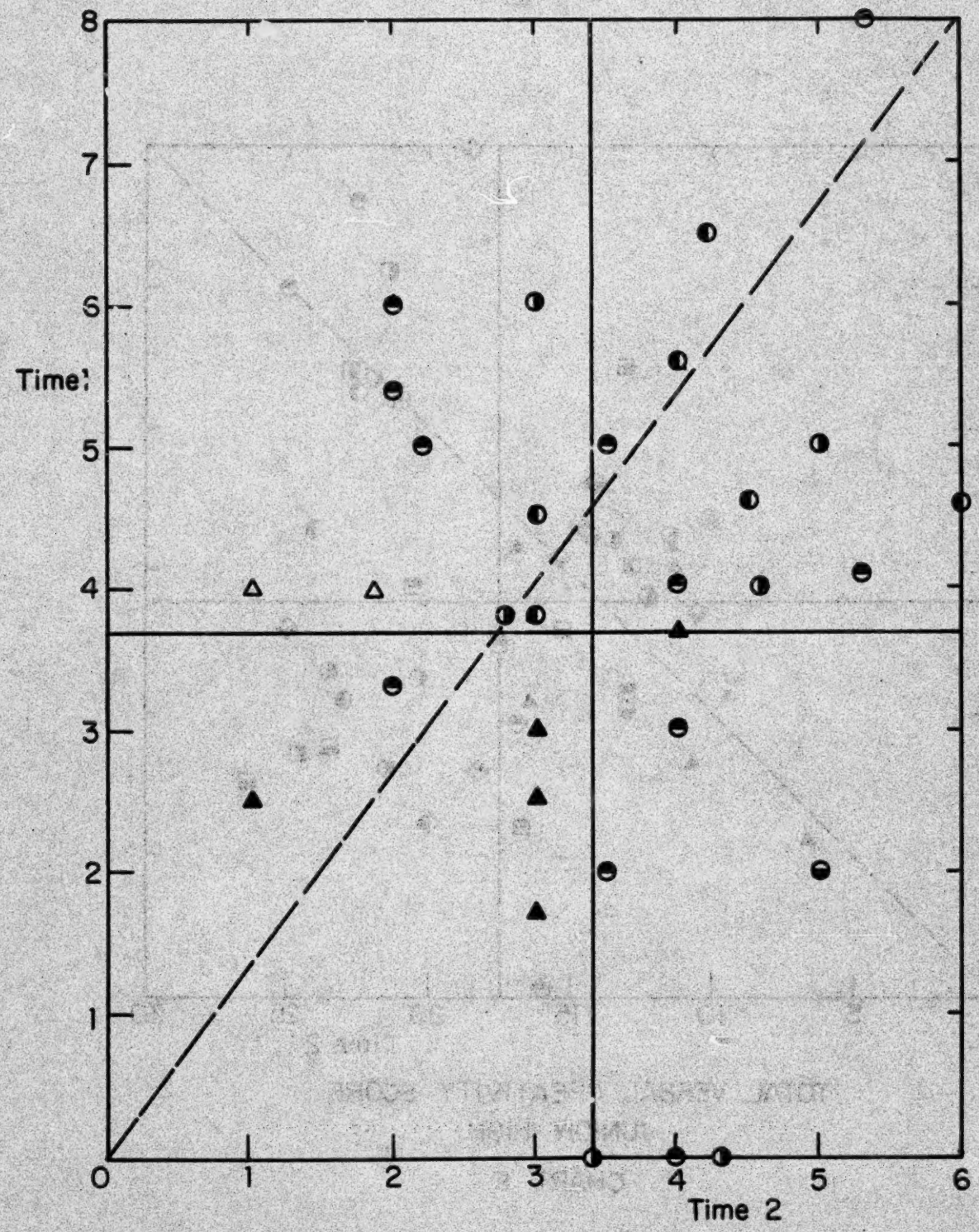
VERBAL CREATIVITY - JUNIOR HIGH

USES OF TIN CANS - BOXES

CHART D

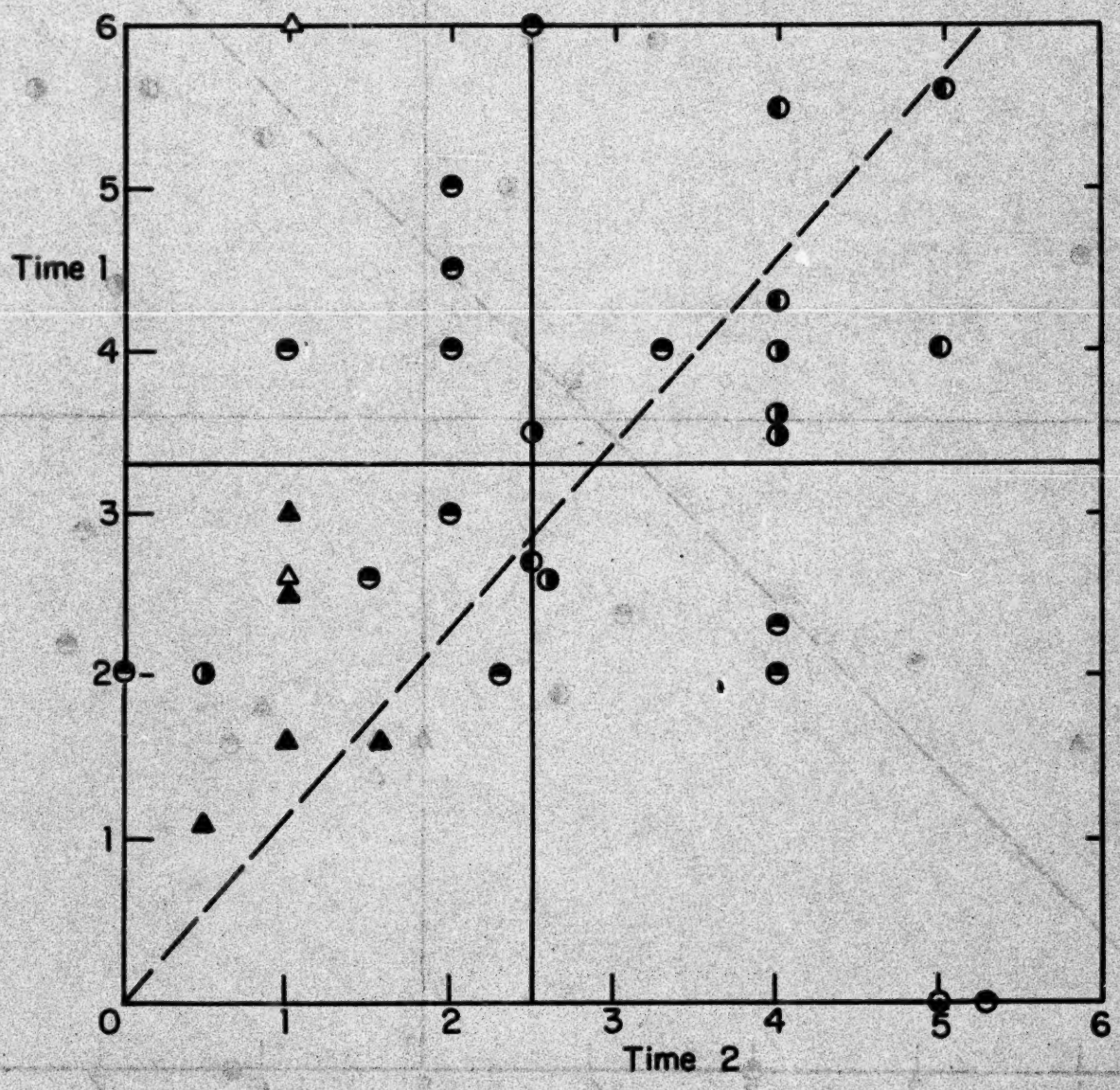


TOTAL VERBAL CREATIVITY SCORE
JUNIOR HIGH
CHART E



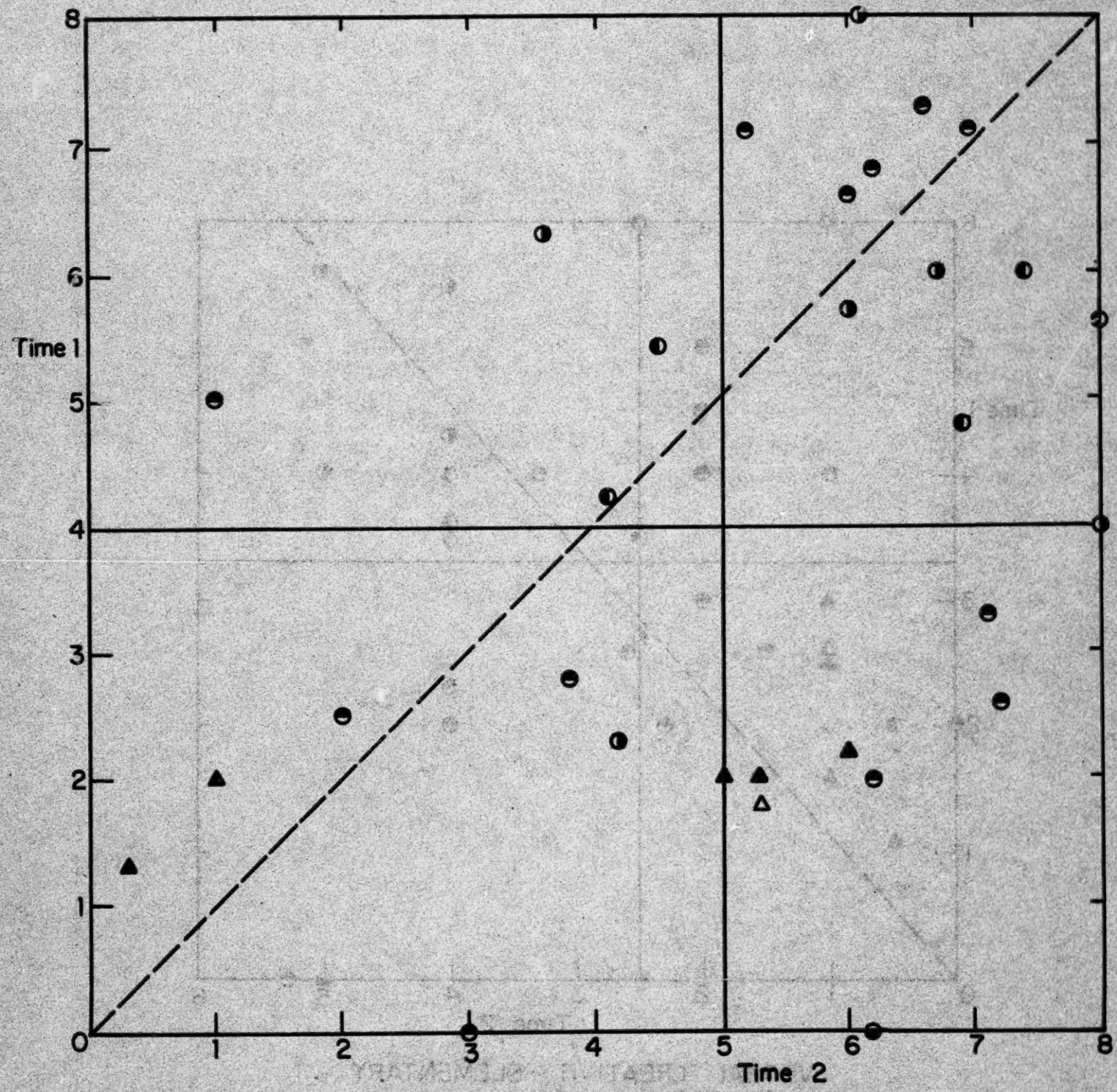
VERBAL CREATIVITY-ELEMENTARY
JUST SUPPOSE #1

CHART F



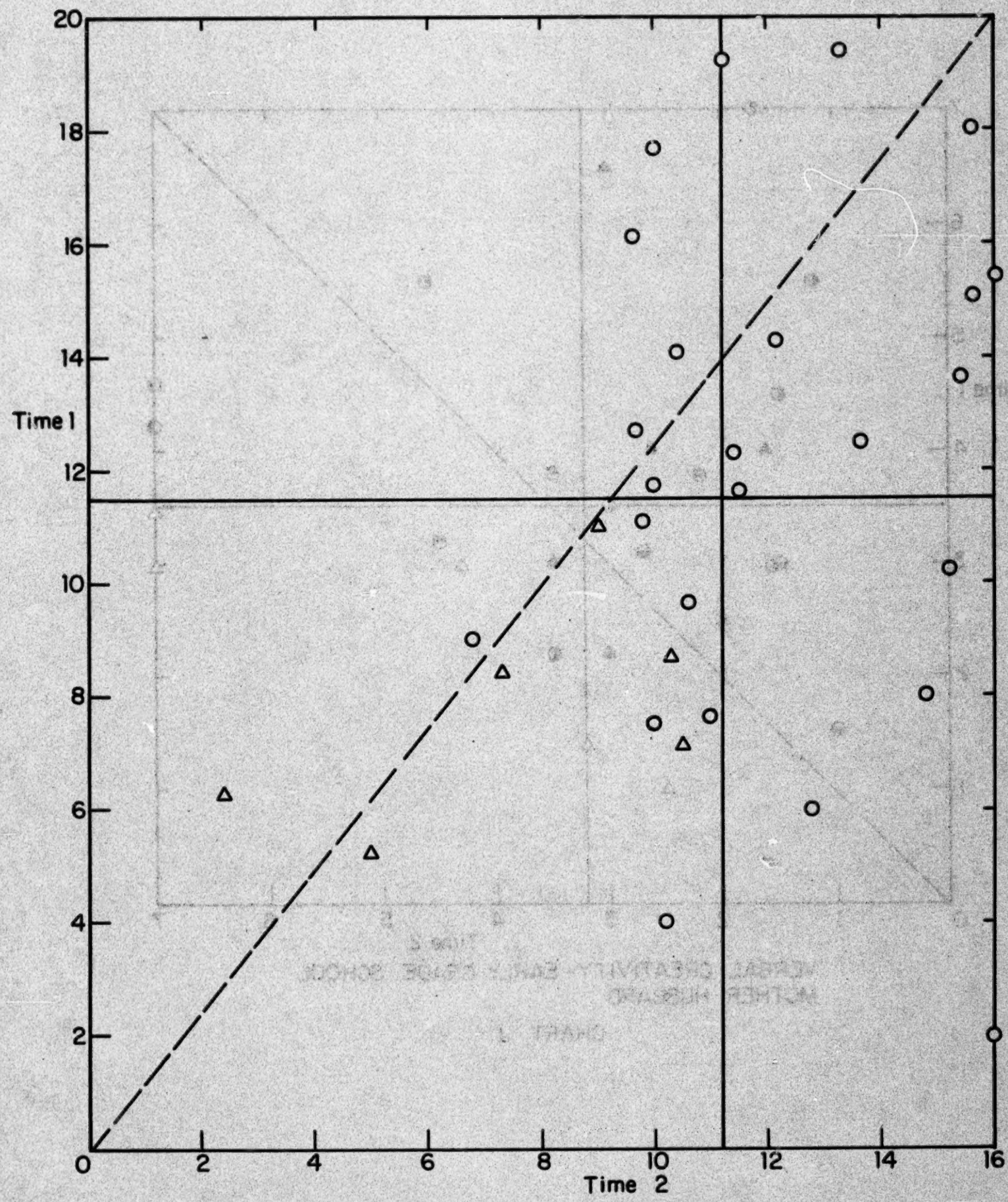
VERBAL CREATIVITY-ELEMENTARY
JUST SUPPOSE #2

CHART G



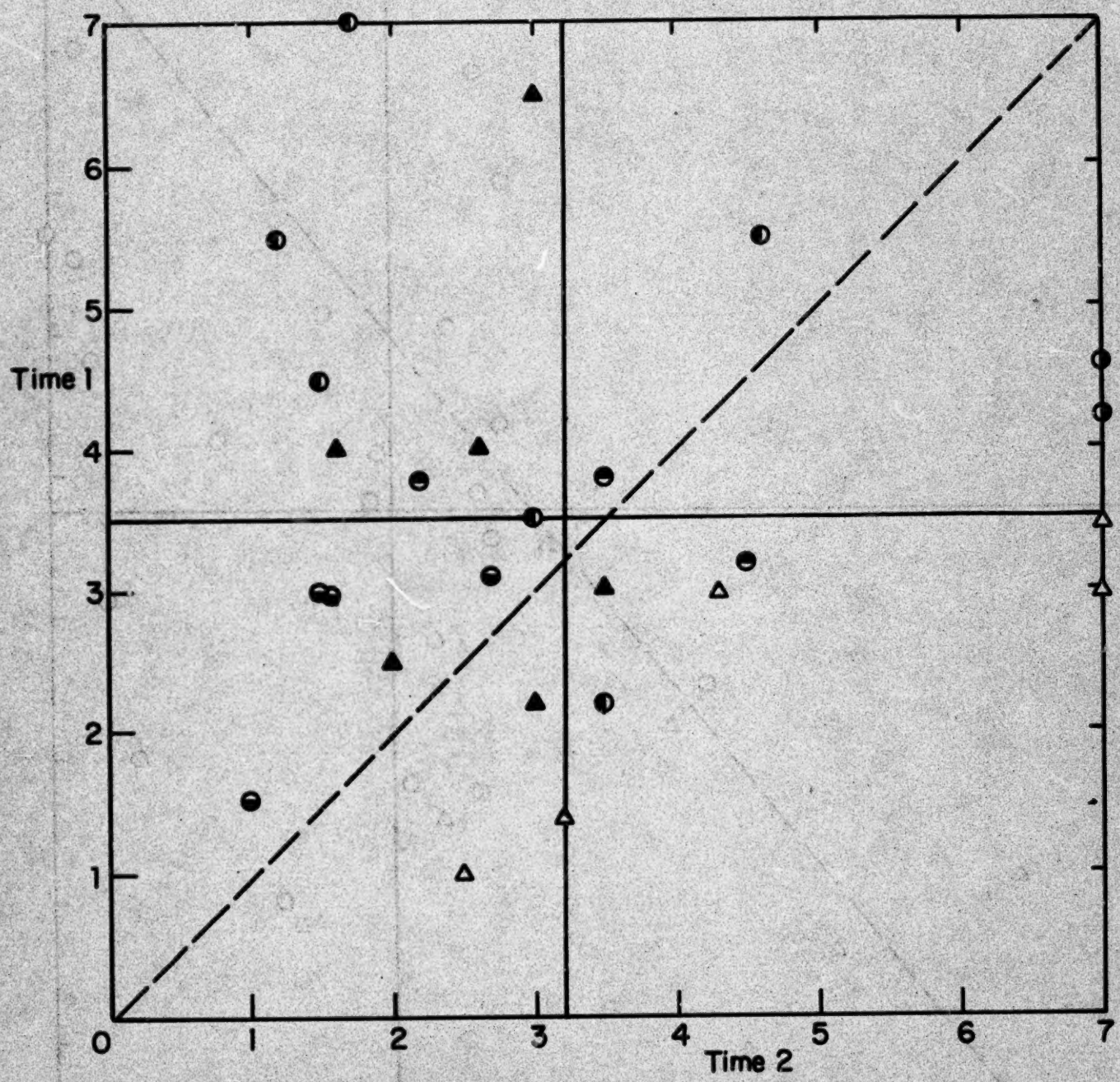
VERBAL CREATIVITY-ELEMENTARY
USES OF TIN CANS

CHART H



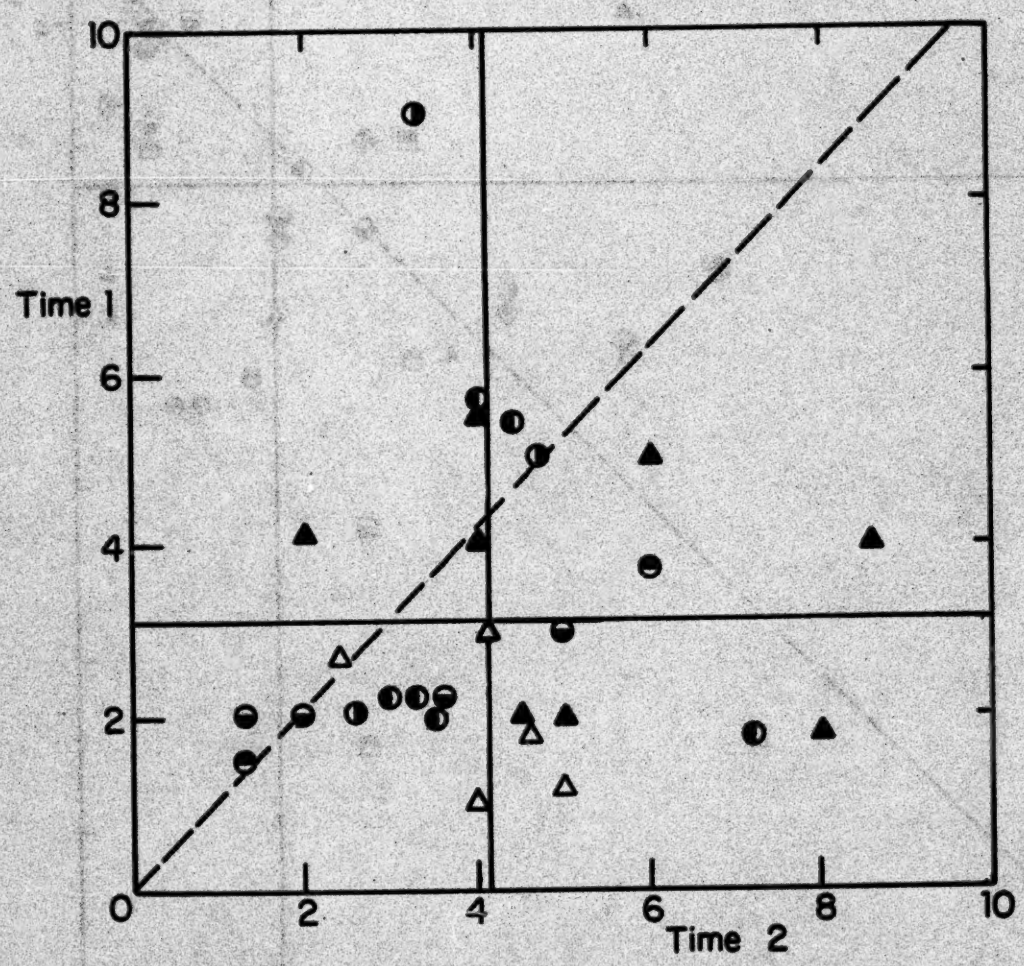
TOTAL VERBAL CREATIVITY - ELEMENTARY

CHART I



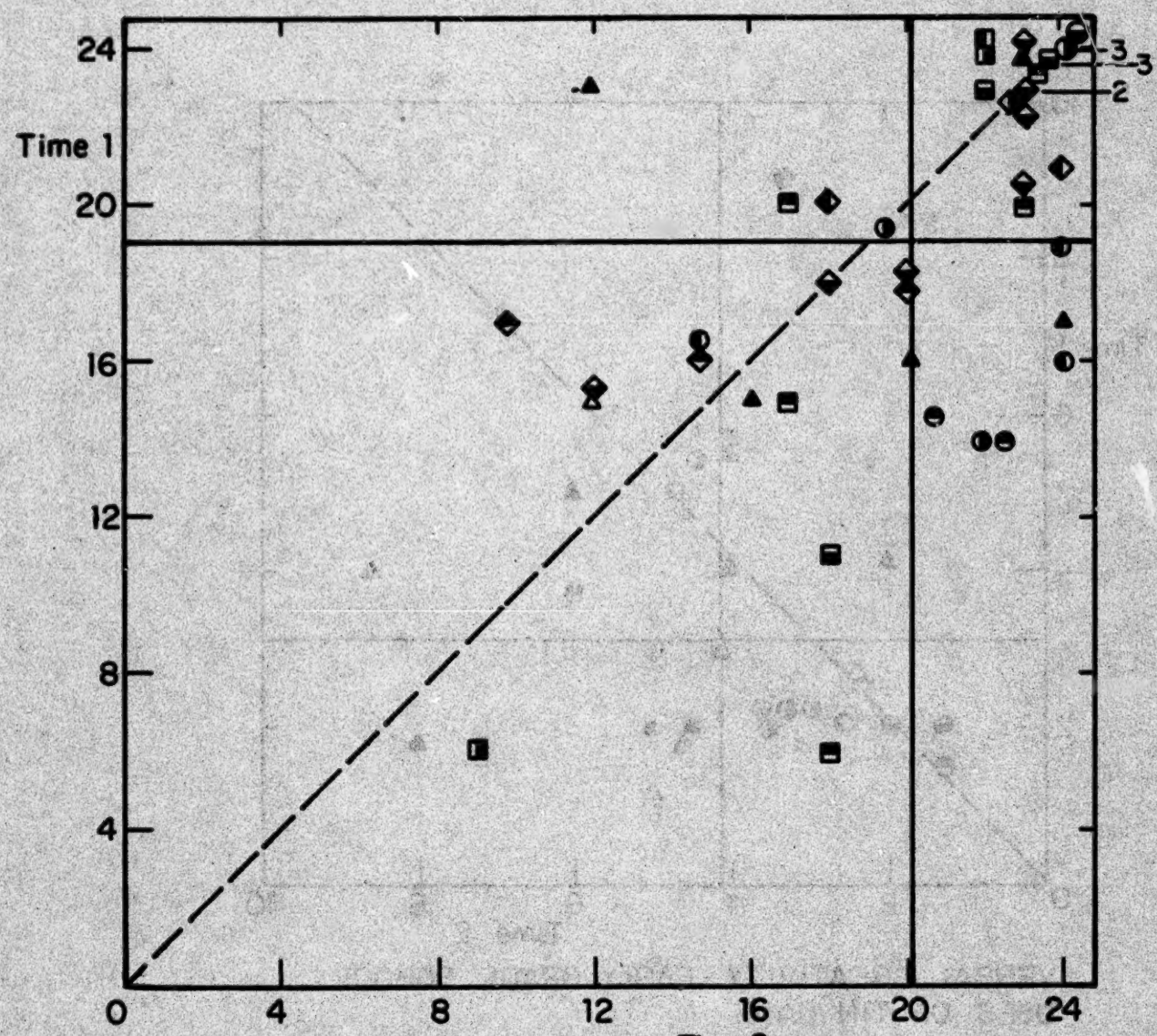
VERBAL CREATIVITY- EARLY GRADE SCHOOL
MOTHER HUBBARD

CHART J



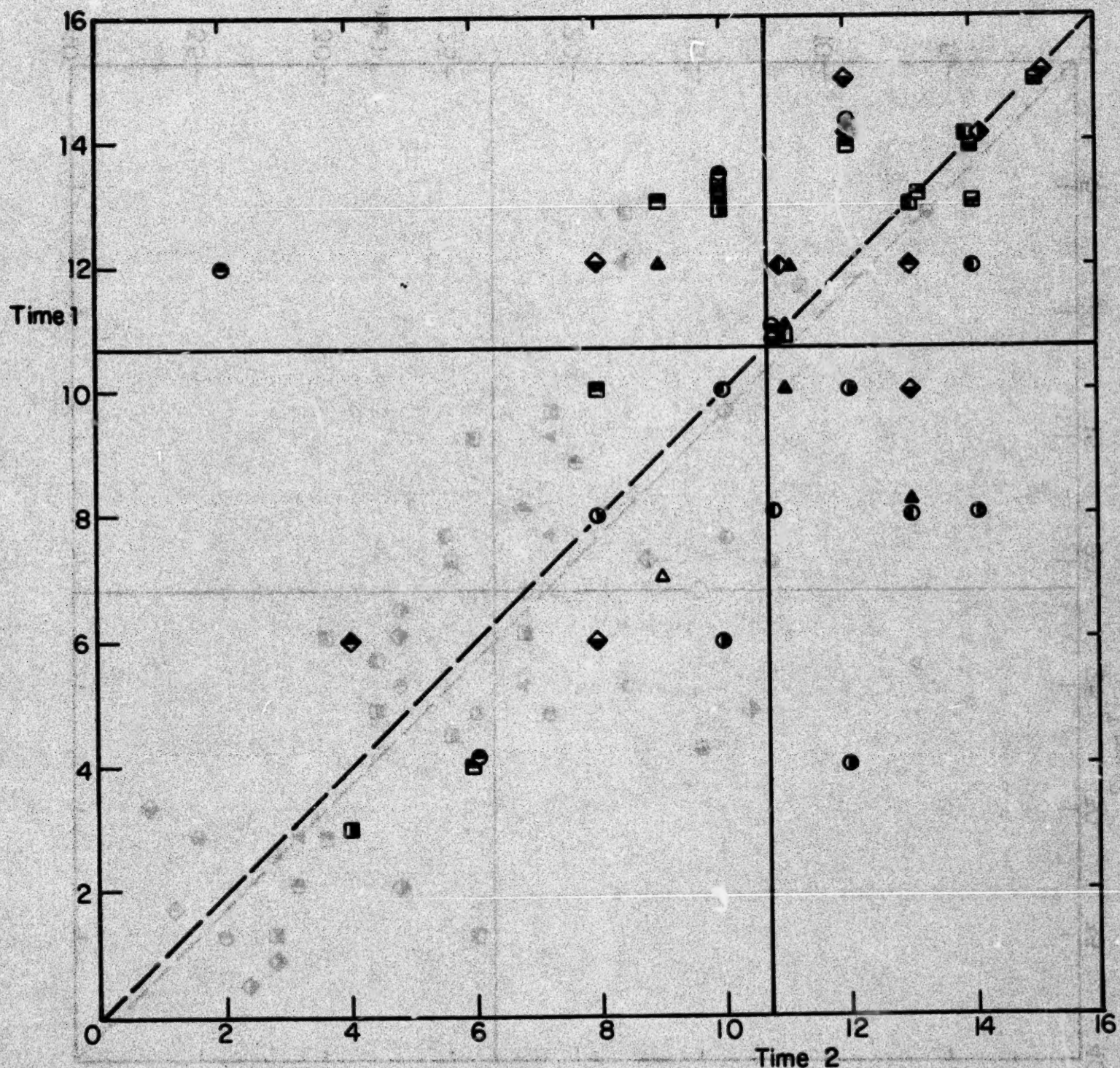
VERBAL CREATIVITY - EARLY GRADE SCHOOL
USES OF TIN CANS

CHART K

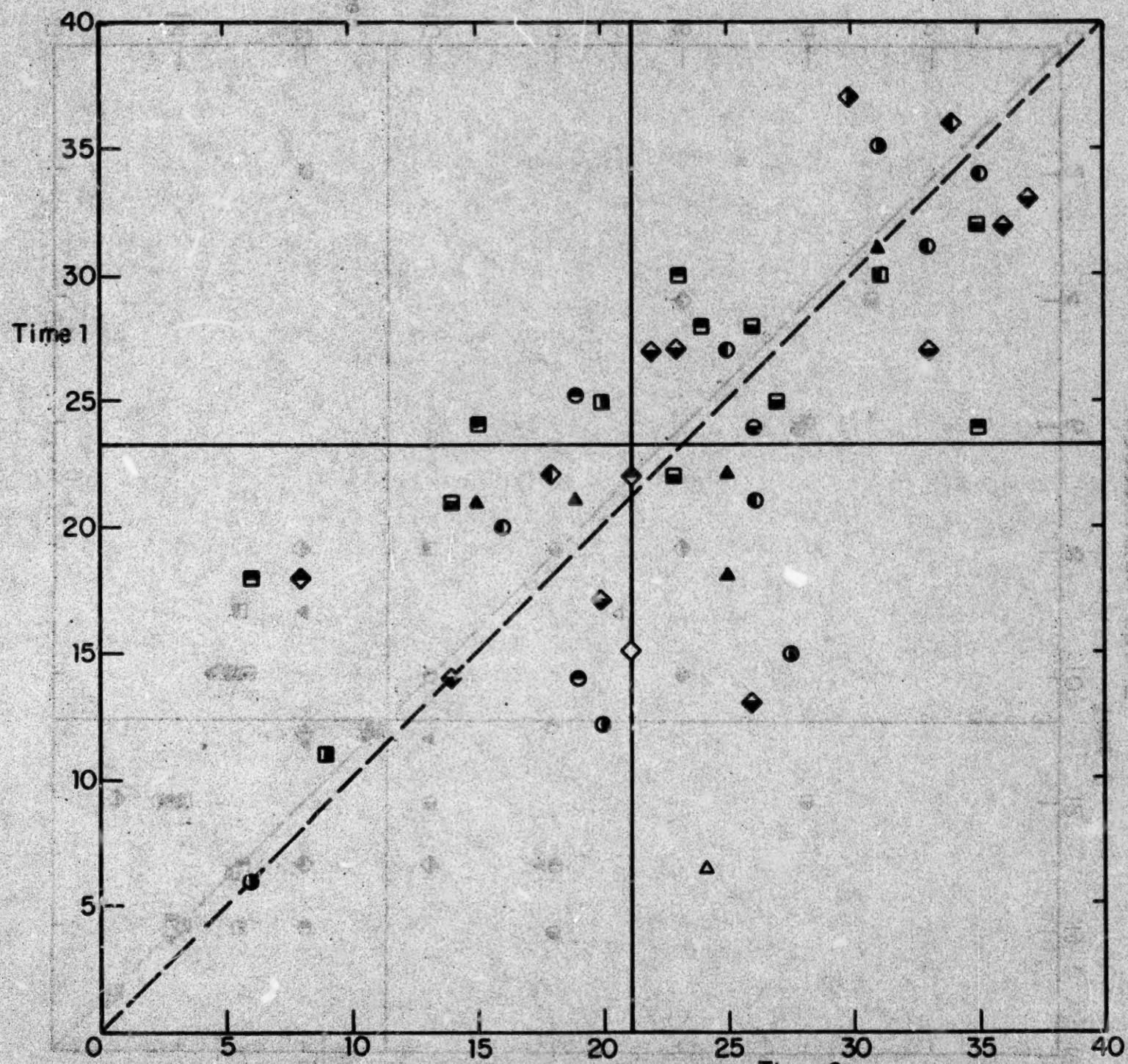


UNIVERSALISM SCALE

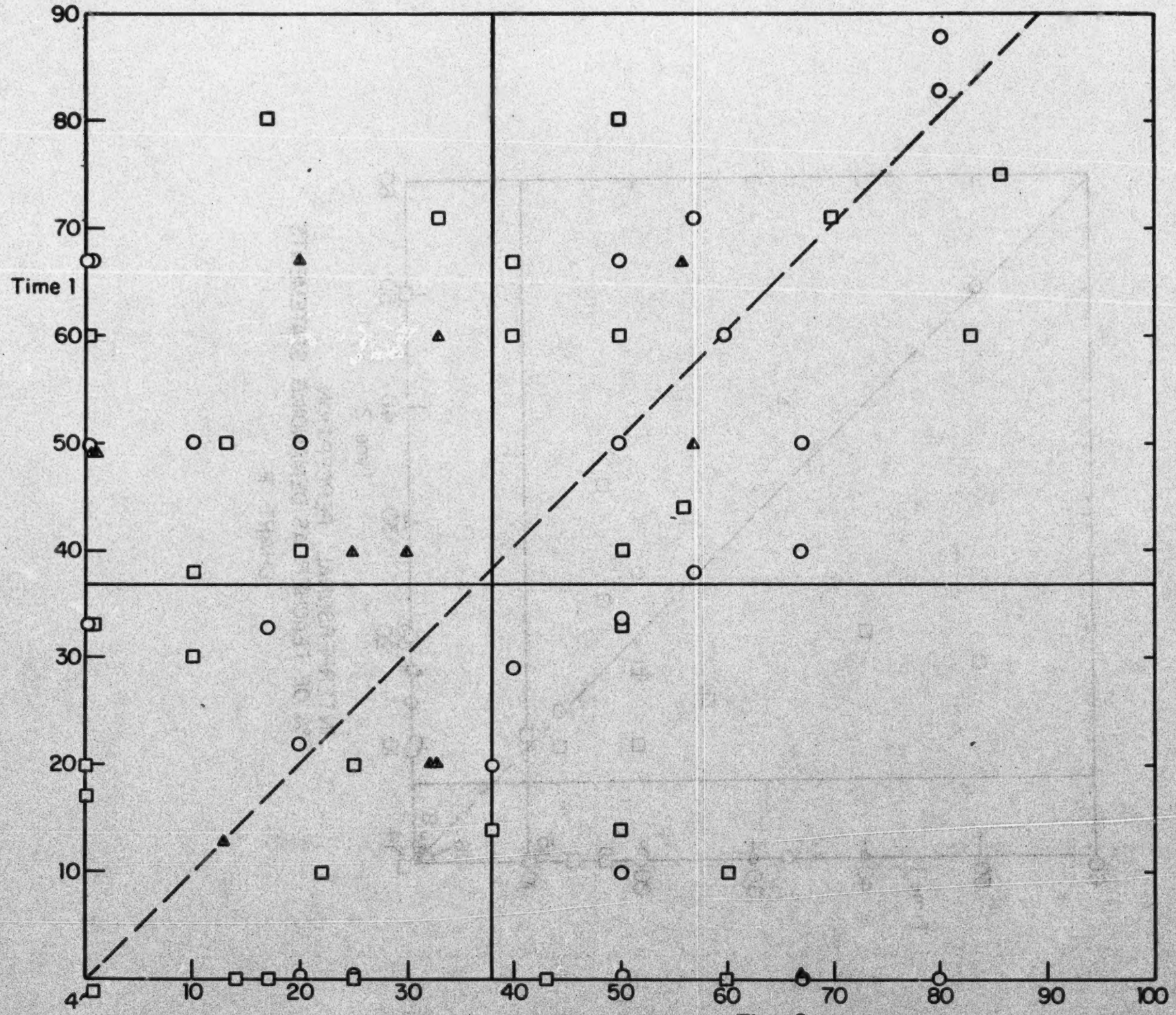
CHART L



COOPERATION SCALE
CHART M

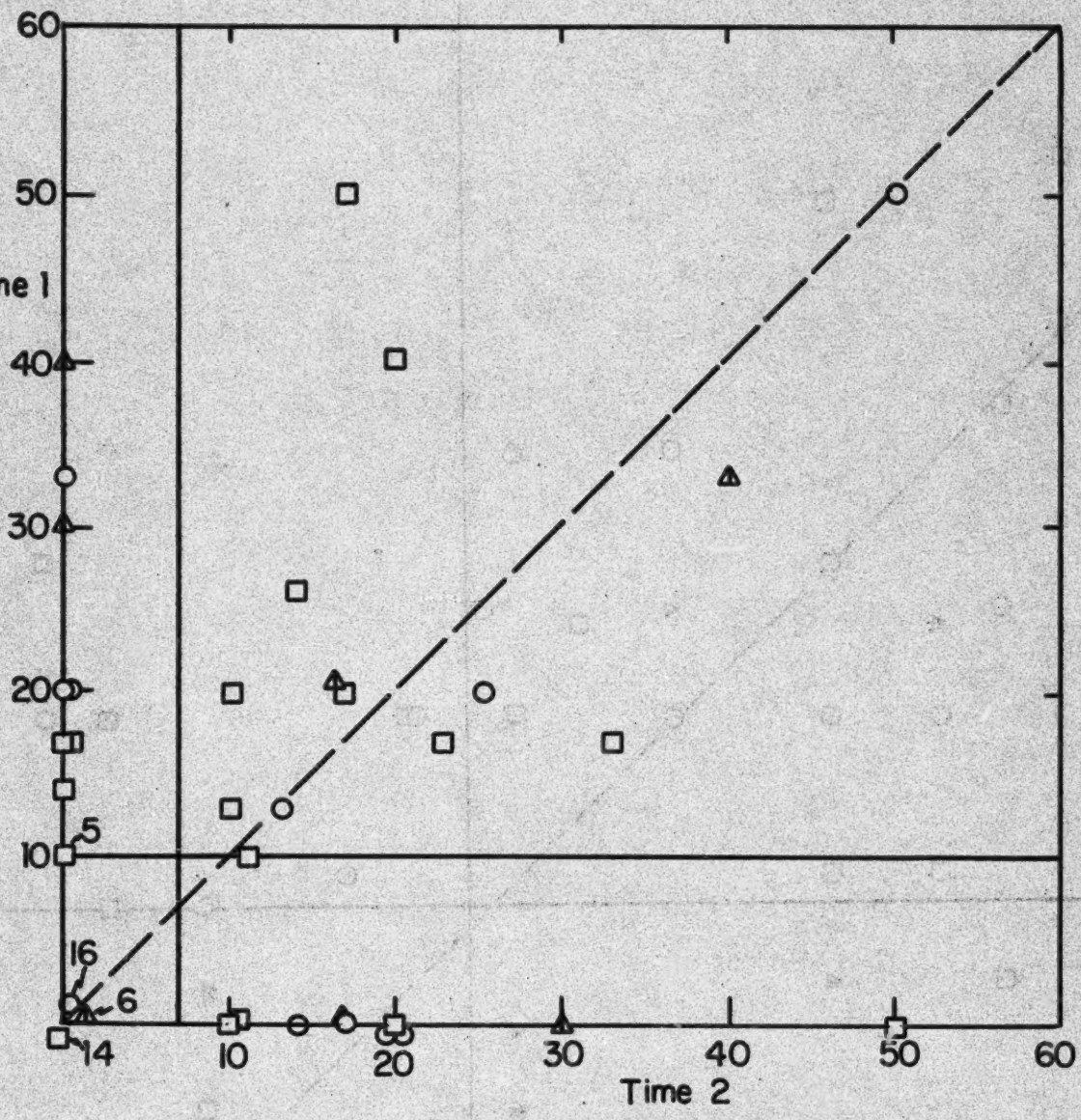


GETZELS AND JACKSON MORALITY SCALE
CHART N



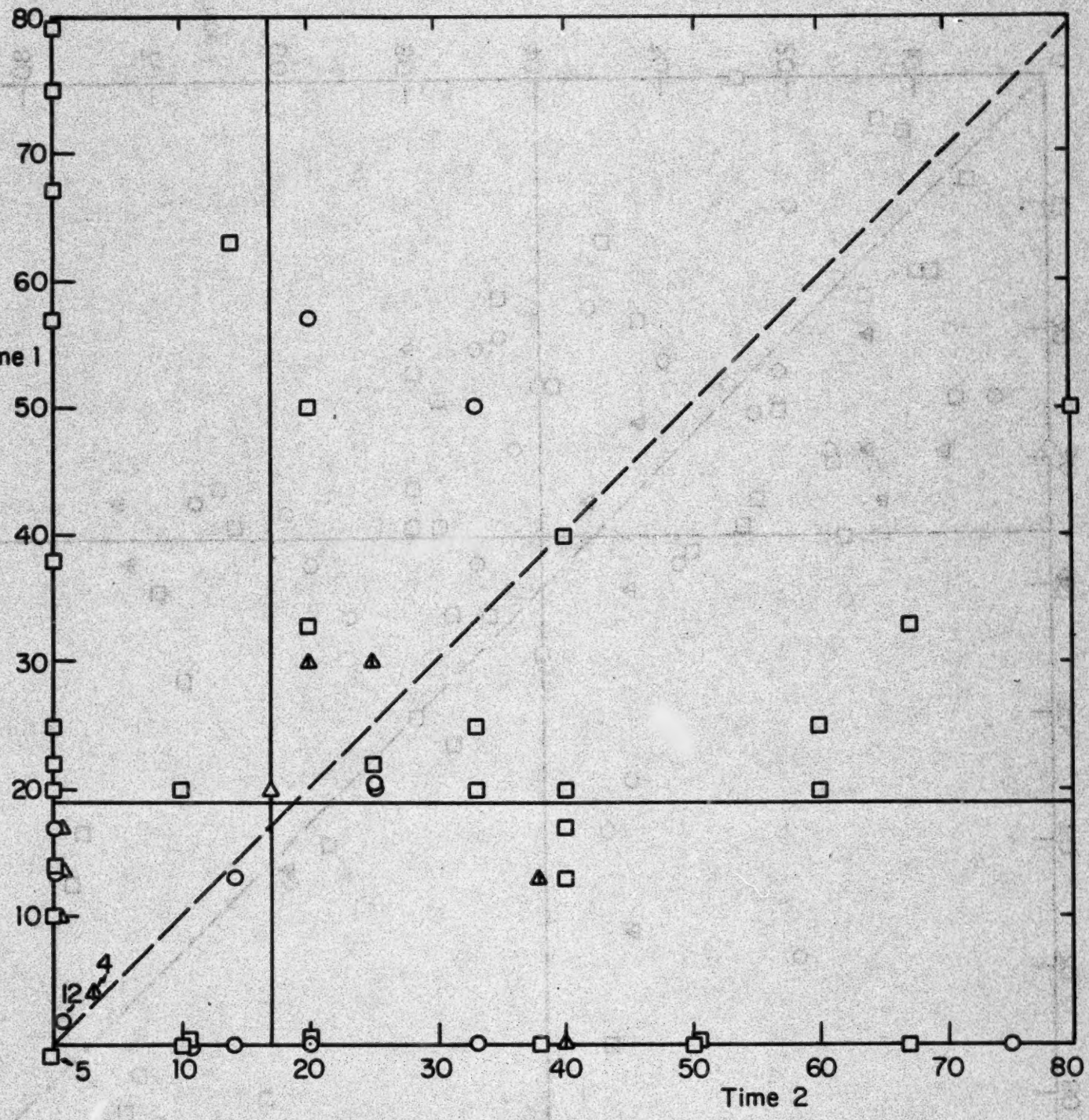
INTERPERSONAL PERCEPTION: % OF POSITIVE EVALUATION OF TEACHERS

CHART O



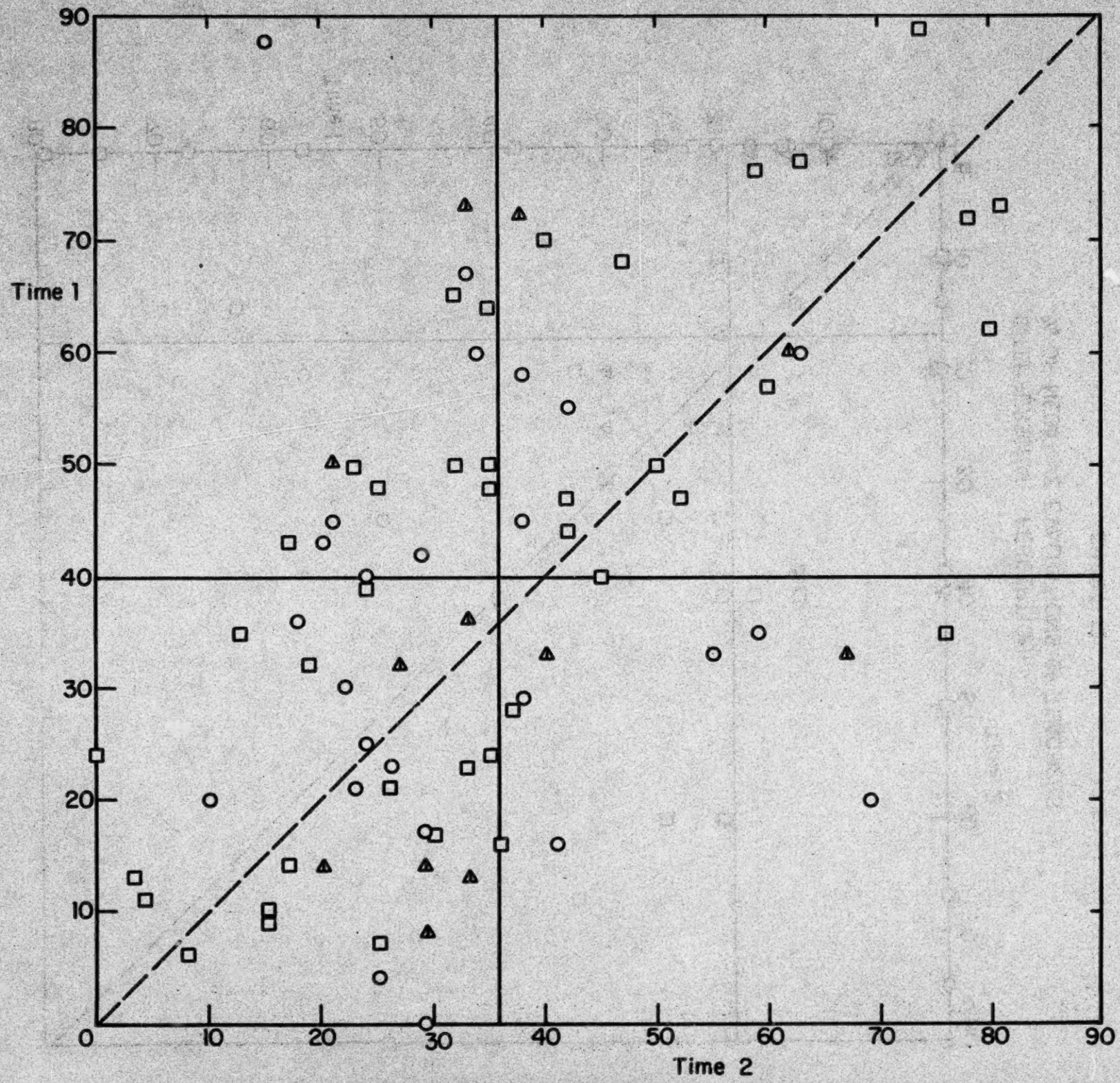
INTERPERSONAL PERCEPTION:
% OF TEACHER AS DEMANDING STATEMENTS

CHART P

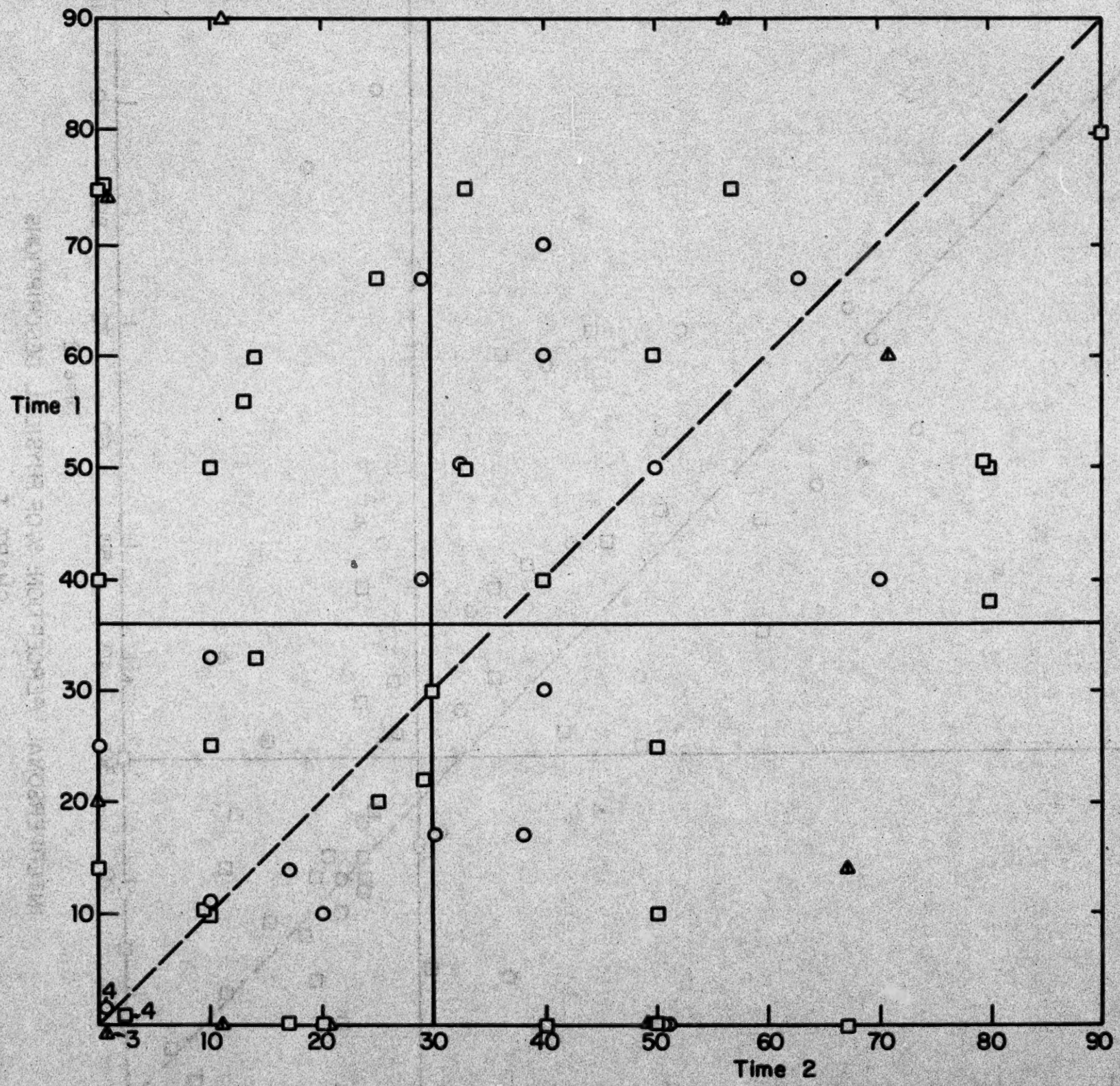


INTERPERSONAL PERCEPTION:
% OF NEGATIVE EVALUATIONS OF TEACHERS

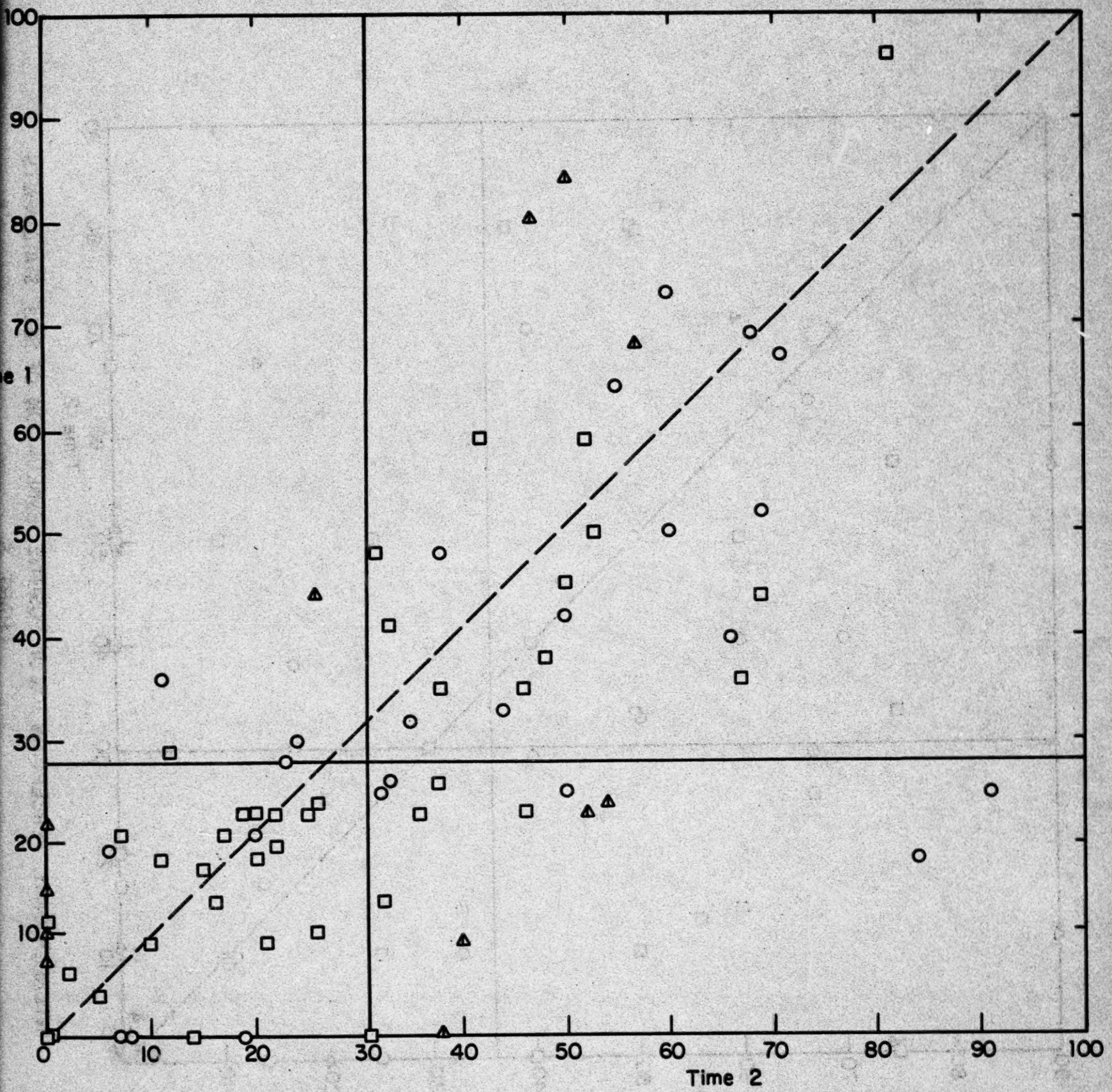
CHART Q



INTERPERSONAL PERCEPTION:
TOTAL % OF POSITIVE STATEMENTS

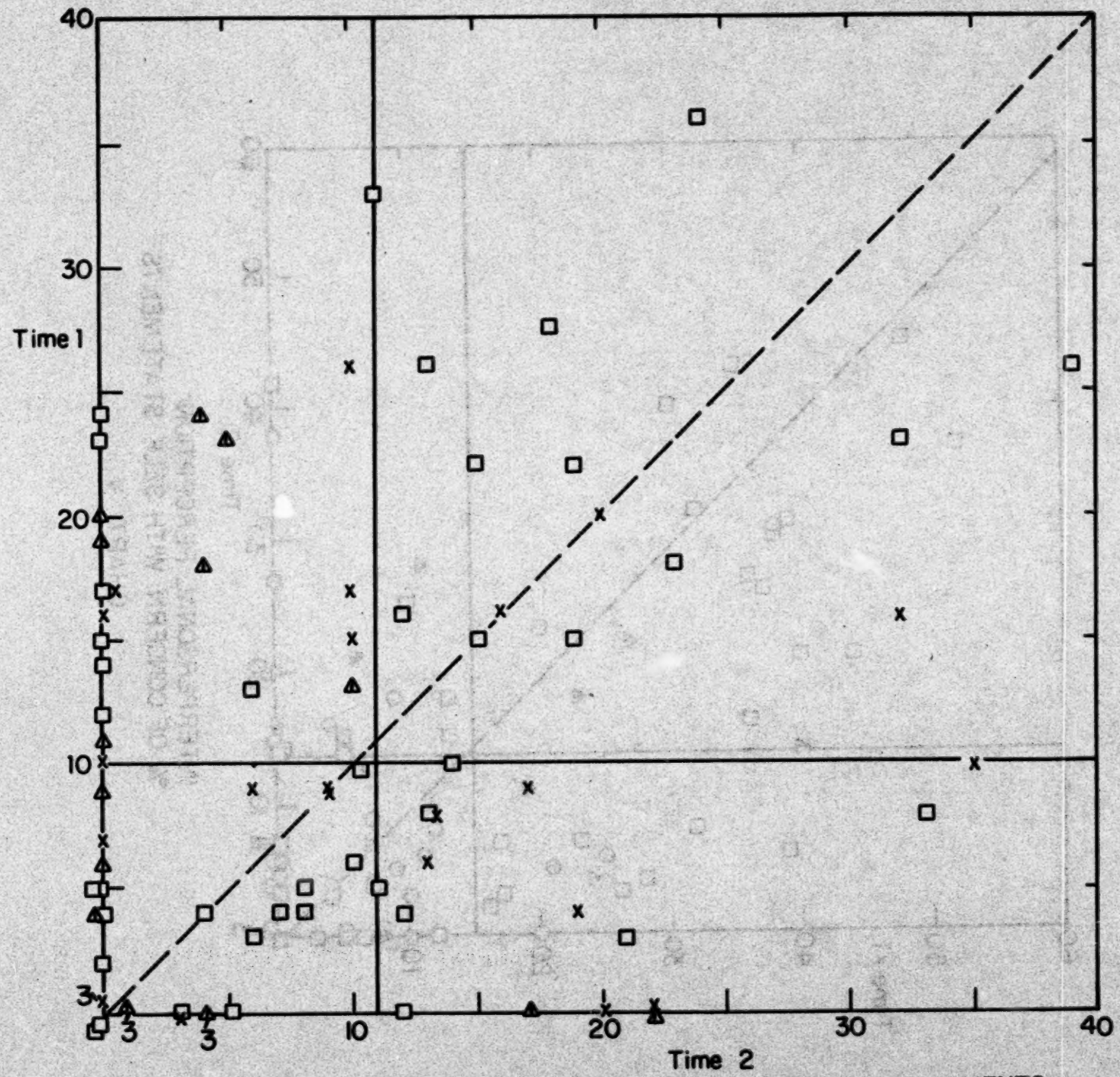


INTERPERSONAL PERCEPTION: % OF POSITIVE EVALUATION OF SELF STATEMENTS
CHART S



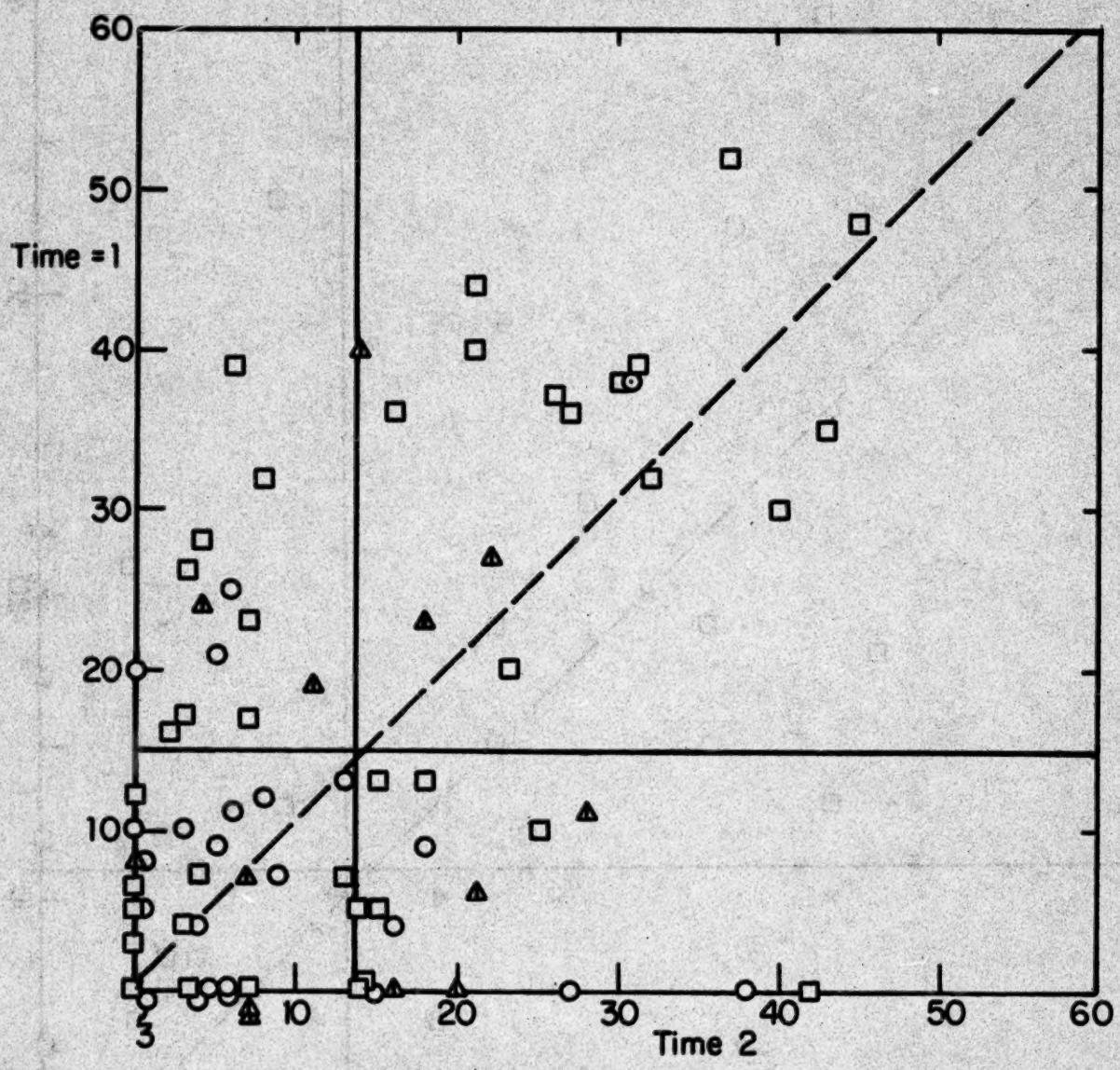
INTERPERSONAL PERCEPTION: % OF PHYSICAL DESCRIPTIONS

CHART T



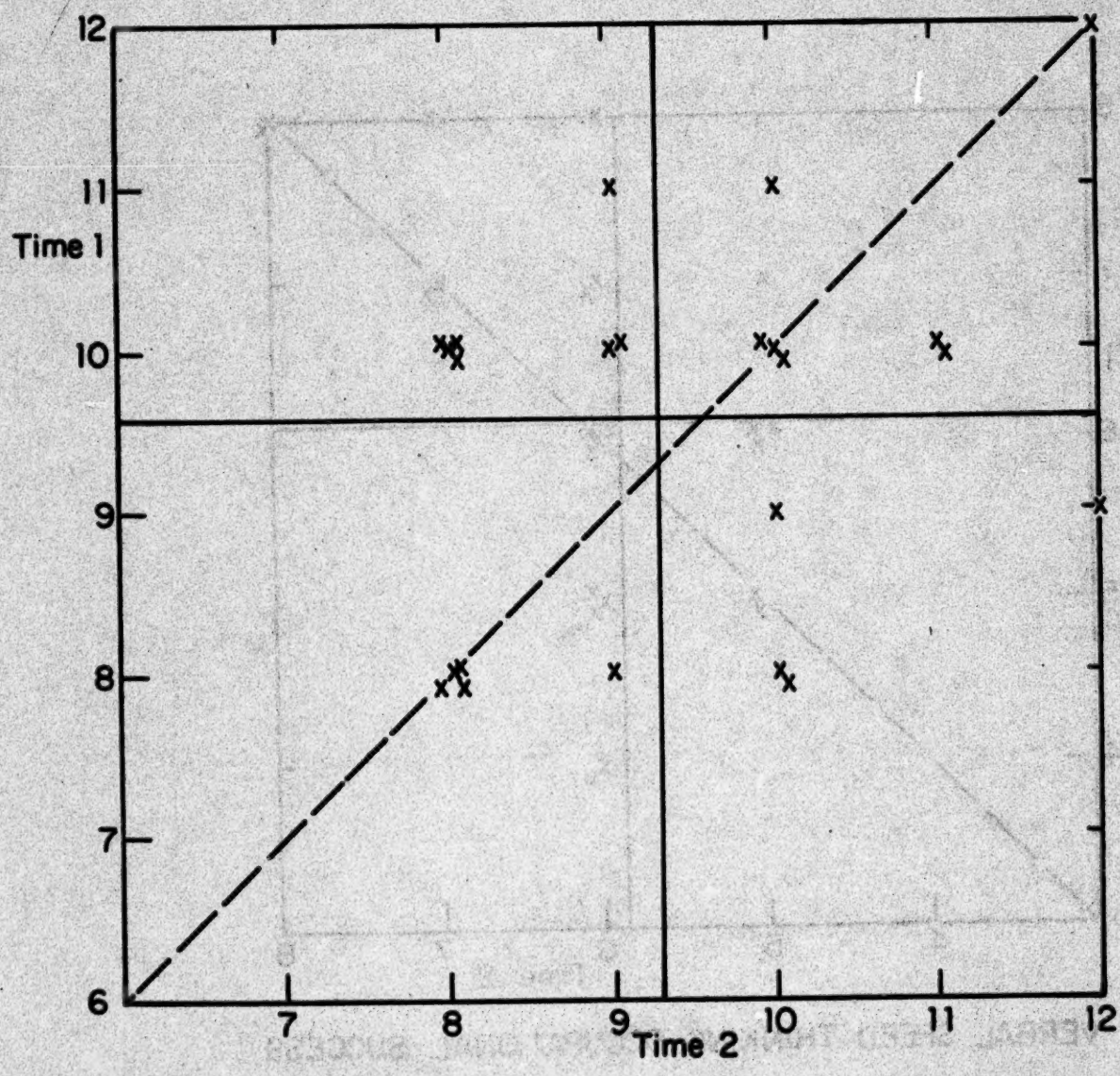
INTERPERSONAL PERCEPTION: % OF INTELLECTUAL CONCERN STATEMENTS

CHART U



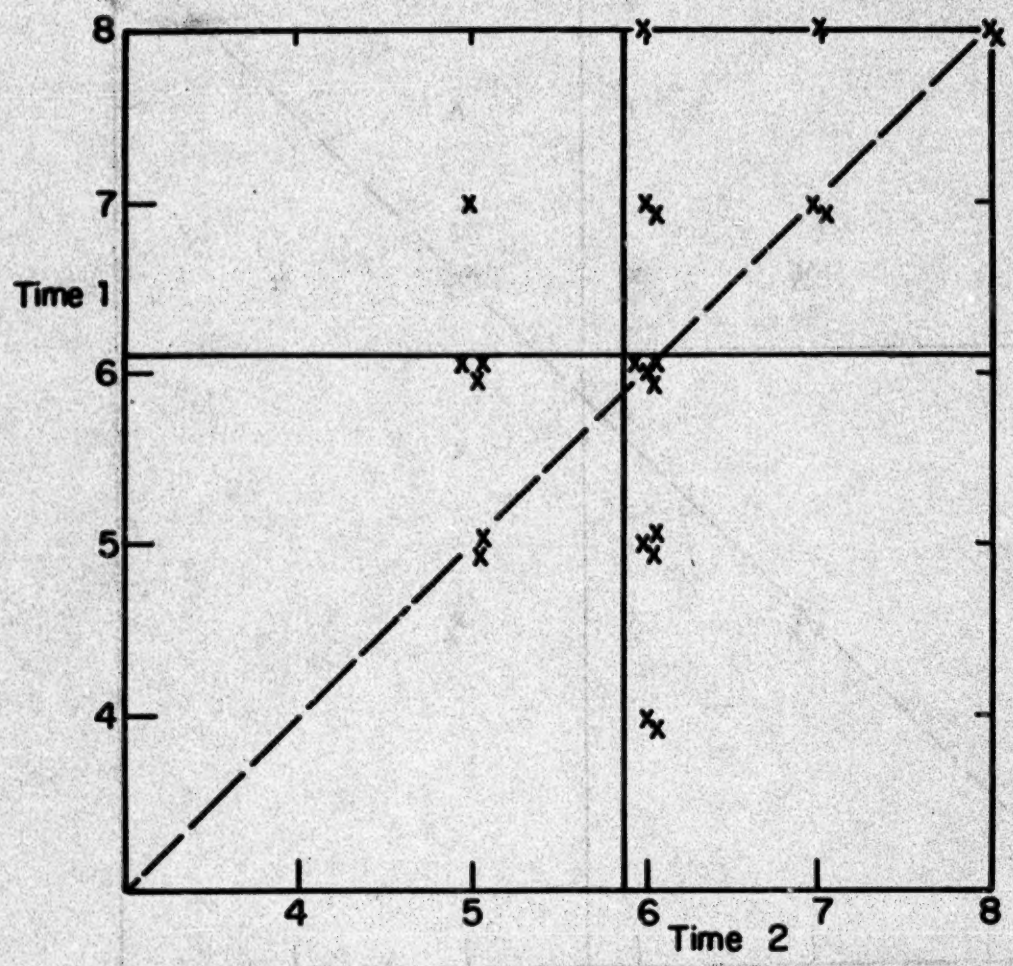
INTERPERSONAL PERCEPTION:
% OF CONCERN WITH SELF STATEMENTS

CHART V



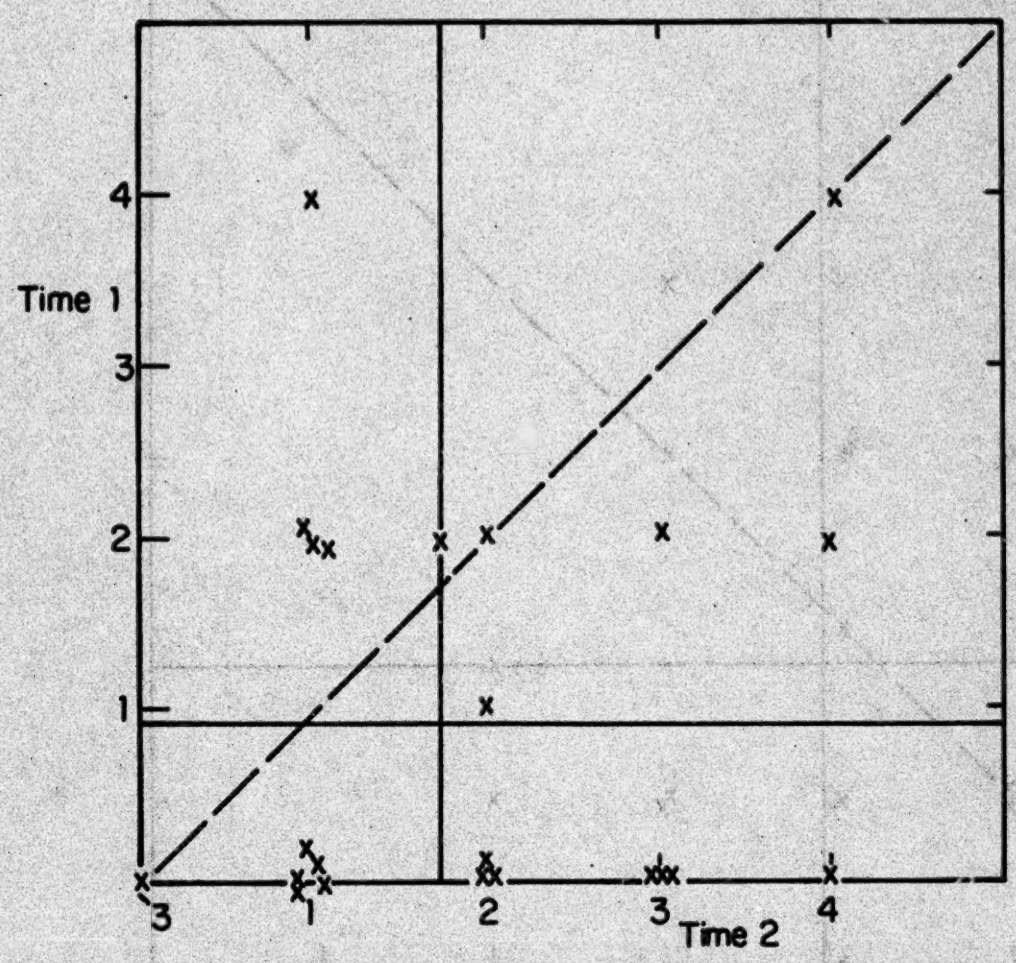
VERBAL SPEED THINKING: POSITIVE ATTITUDES TOWARD TEACHERS

CHART W



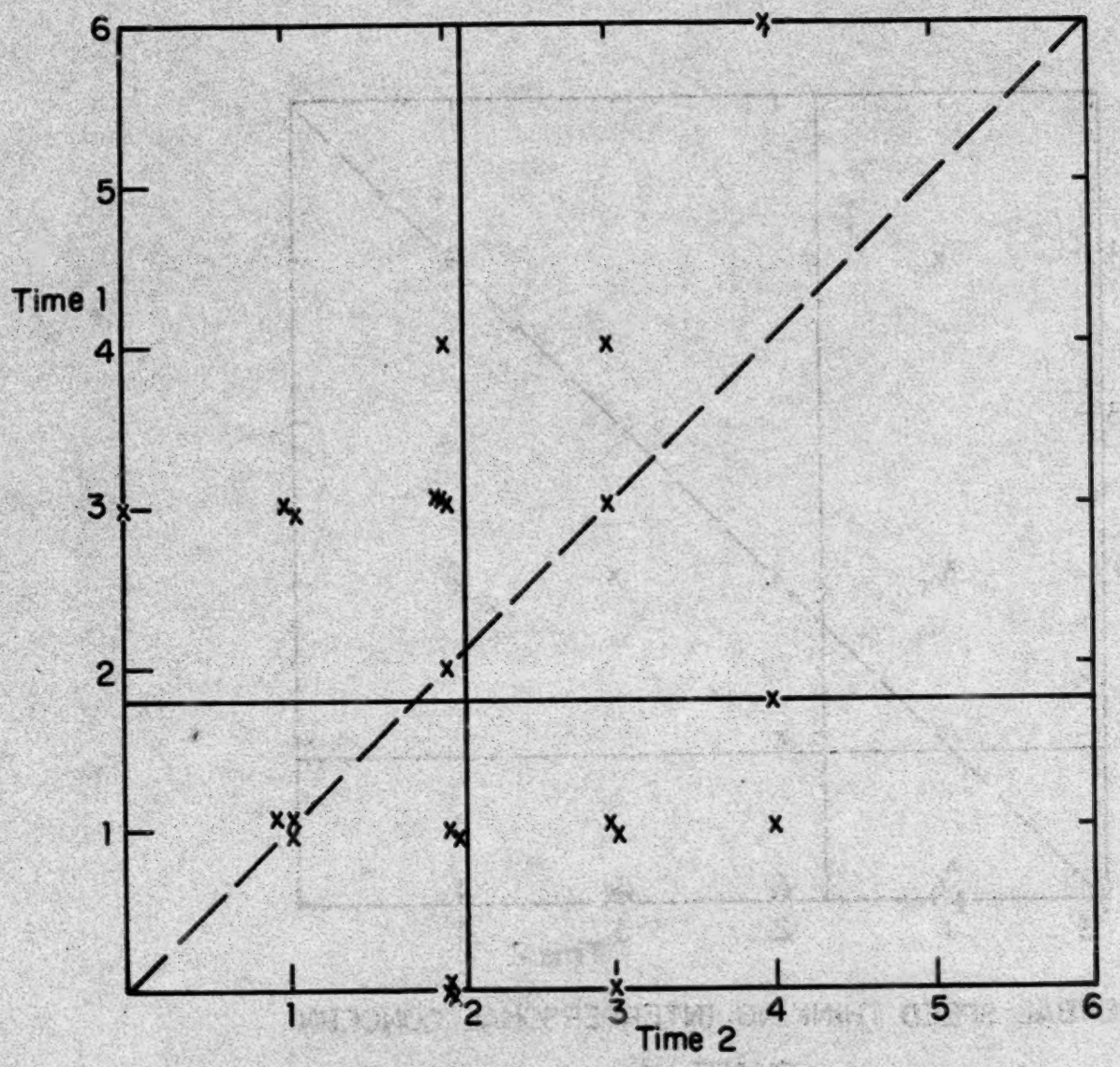
VERBAL SPEED THINKING: OCCUPATIONAL SUCCESS

CHART X



VERBAL SPEED THINKING: INTERPERSONAL CONCERN

CHART Y



VERBAL SPEED THINKING: INTELLECTUAL CONCERN

CHART Z